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TWENTY-FOURTH

ANNUAL REPORT

OF THE

Medical Officer of Health

TO THE

GLOUCESTERSHIRE

COMBINED

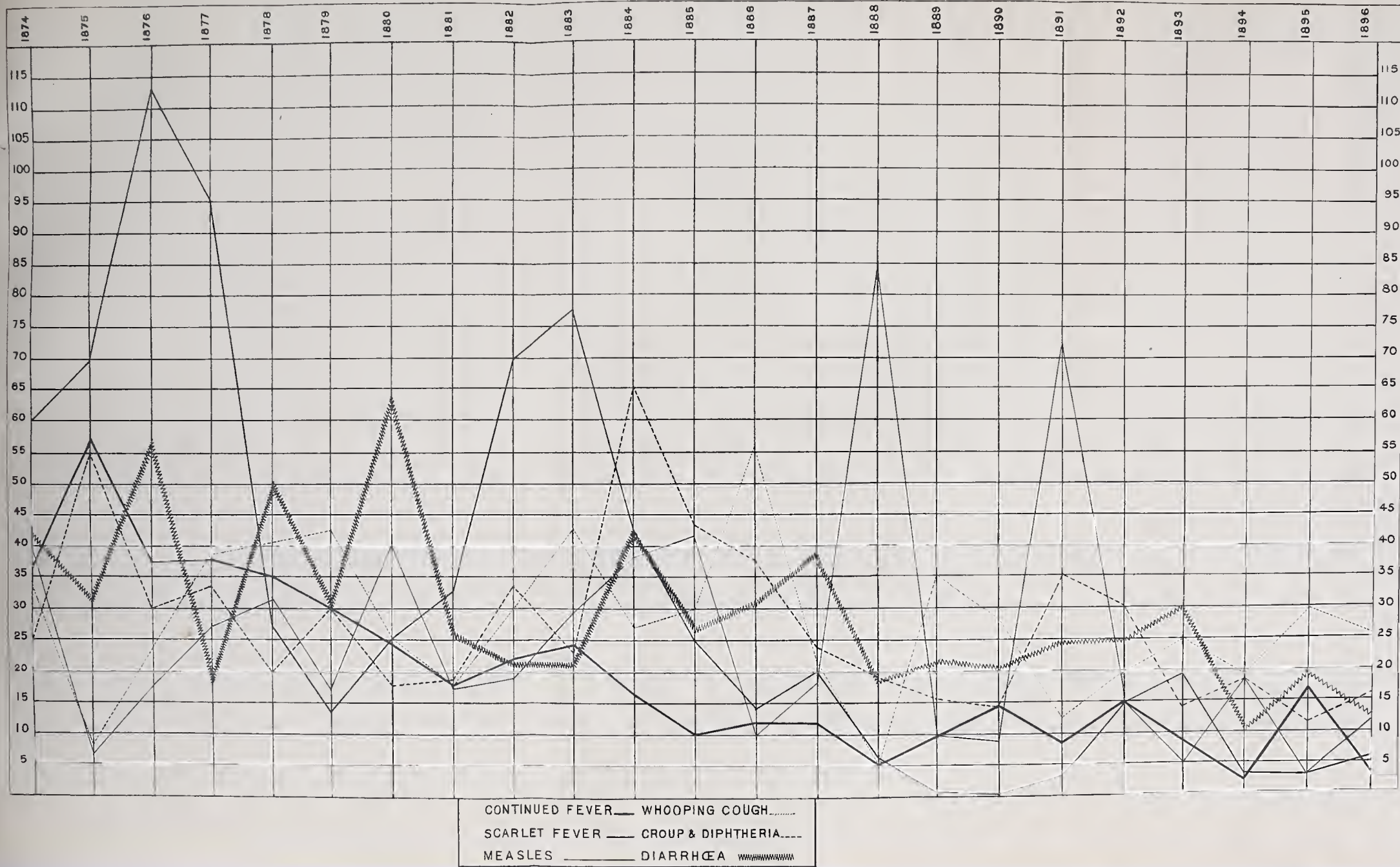
Sanitary District,


FOR THE YEAR 1896.

Gloucester :

1897

DIAGRAM SHOWING THE FLUCTUATIONS OF MORTALITY FROM THE MORE IMPORTANT INFECTIOUS DISEASES IN THE GLOUCESTERSHIRE COMBINED DISTRICT SINCE 1874





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TO THE
GLOUCESTERSHIRE
COMBINED
Sanitary District,
FOR THE YEAR 1896.

Gloucester :

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THE GLOUCESTERSHIRE Combined Sanitary District

*Comprises the following Sanitary Authorities : **

RURAL: CHEPSTOW, CHIPPING SODBURY,
CIRENCESTER, GLOUCESTER,
LYDNEY, TETBURY AND
WESTBURY-ON-SEVERN.

URBAN: AWRE, CIRENCESTER, NEWNHAM,
TETBURY, WESTBURY-ON-SEVERN.

AREA: 318,558 ACRES. POPULATION IN 1891, 96,363.

Medical Officer of Health:

FRANCIS T. BOND, M.D., B.A. LOND., F.R.S.Ed.

RESIDENCE: GLOUCESTER.

* The Thornbury Rural Sanitary District, which for fifteen years was included in the Combined District, is not so now, though it has the same Medical Officer of Health. The Report for this District is published separately.

TO THE RURAL AND URBAN DISTRICT COUNCILS
OF THE
Gloucestershire Combined District.

GENTLEMEN,

I HAVE the honour to submit for your consideration my Annual Report of the general Sanitary condition of the Combined District for which I act as Medical Officer of Health, and also of the several constituent portions of it, for the year 1896, being the twenty-fourth such Report which I have made since my appointment to it.

The most noteworthy feature of the year has been the epidemic of Small Pox, which, originating in the city of Gloucester, assumed there proportions such as, unfortunately for the city, to constitute it an epoch in the history of that disease, and which spread thence to some of the neighbouring districts, but, happily, to a less extent than might have been expected. I shall deal hereafter with the principal features of this epidemic, so far as they are of interest in connection with the Combined District, and content myself with here recording the fact that it created so much anxiety as to the possibilities of its extension into the neighbouring districts that it led to the provision of accommodation for purposes of isolation in no less than five of the Sanitary areas for which I act as Medical Officer of Health. It is true that in no case is this accommodation of a complete or permanent character, but, such as it is, it is better than nothing ; and in some cases in which, happily, it was not required to be used for the purpose for which it was actually intended, it remains available for use in other forms of infectious disease, and thus meets a want which has for many years been seriously felt.

The nature and amount of the accommodation thus provided is as follows :—

EAST DEAN RURAL DISTRICT.—In this District a corrugated iron building, lined with wood, and consisting of two wards, capable of holding ten beds each, together with nurses' room and other accessories, has been erected in a picturesque portion of the Forest of Dean, and one which is fairly central, so far as the District as a whole is concerned. This building, which has cost £722, was used during the months of April and May for the reception of two Small Pox patients, one of whom, a child, died in it. It has since not been used for any purpose, as I did not feel able to accept the responsibility of assuring the District Council that it could, in its present condition, be so thoroughly disinfected that cases of ordinary infectious disease could be safely taken into it. But the Hospital at Soudley is still available for such cases. The Small Pox Hospital at Green Bottom stands on land which is held on lease from the Commissioners of Woods and Forests at a small annual rent.

LYDNEY RURAL DISTRICT.—In this District some trouble occurred in finding a site for a Hospital, which was ultimately obtained, though not without a good deal of protestation from the parishioners, in the parish of Alvington. A piece of land, in a good central position, was secured, and a corrugated iron building lined with wood, consisting of two wards, each capable of holding six beds, a nurses' room and some other appendages, was erected at a cost of £400. Fortunately no case of Small Pox occurred in the District after the Hospital was completed, and it was used during the course of the summer for the reception of a case of Enteric Fever which occurred at Lydney. It is very suitable for such cases, and will, notwithstanding its temporary character, form a valuable resource in the event of any outbreak similar to that which occurred at Lydney two years ago. Cases of Diphtheria also, the infection of which is not persistent or difficult to obliterate, may be treated in it without rendering it unsuitable for other

purposes, but it will not be safe to use it, in its present condition, for either of these diseases, if it should have at any time been used for the reception of patients with Scarlet Fever. It is this difficulty of thoroughly freeing buildings lined with wood in this way from the infection of Scarlet Fever and Small Pox, which militates against their employment for general Hospital purposes. But it is open to consideration whether, if the woodwork can be effectually covered with a coating of a strong, slightly flexible and impervious fabric, and the whole surface then well lime-washed, they might not be employed alternatively for any class of cases as safely as more substantial structures of stone and brick can be.

CHIPPING SODBURY RURAL DISTRICT.—In this District the District Council decided to rent on a lease, with the option of purchase, a couple of cottages admirably situated, both as regards central position and isolation of site, on Sodbury Common. Since then, these cottages have been put in good repair and re-arranged internally, at a cost of £130. But they are still not ready for occupation, as the drainage is incomplete, the road to them needs improvement, and they are not furnished. The building thus provided, though small, there being room only for six beds. at the outside, will be a valuable resource, when completed, for the reception of casual cases, for which need has so often been felt in this District.

CIRENCESTER RURAL AND URBAN DISTRICTS.—The Authorities of these Districts, who have for about twenty years had a joint Hospital for ordinary cases of infectious disease, that has on two occasions been used for the reception of casual cases of Small Pox, decided also to join in renting a couple of cottages in the parish of South Cerney, for the reception of cases of Small Pox. With this object the cottages were put into a good state of repair, and have been used for the reception of two cases of Small Pox, which occurred in the town of Cirencester almost immediately afterwards. As they were taken on a lease, they are still in

the hands of the joint Authorities, and are available for the reception of cases of Small Pox which may occur at any time.

The other Authorities of the Combined District have not made any provision for the isolation either of Small Pox or of other forms of infectious disease, but during the course of the epidemic in Gloucester a few cases which occurred in that portion of the suburbs of the City which is in the Rural District, were, by arrangement with the City Council, removed into the City Hospital.

It will thus be seen that one good effect of the Gloucester epidemic has been to stimulate in a very material degree the provision of hospital accommodation in other parts of the County. In all the cases referred to it has been decided to meet the cost of providing this accommodation out of current rates. By so doing, there has been no need to invoke the approval of the Local Government Board, as there would have been if the money had been borrowed. The policy of thus imposing upon a limited number of ratepayers a considerable outlay, the advantages of which will be available for some years to come to their successors, is, of course, open to question ; but it may be defended on the ground that the requirements of the Local Government Board in regard to the location and construction of infectious hospitals, and especially of those which are intended especially for Small Pox, are so onerous that compliance with them is in many cases impracticable, and in all entails such serious outlay as to deter Sanitary Authorities from embarking on it unless great pressure is put upon them by continued expression of public opinion, excited by such a disastrous lesson as Gloucester has had to learn.

If these iron and wooden buildings could be so lined as to allow of their being effectually disinfected and limewashed, as I have before suggested, and if, also, the Local Government Board would sanction loans for periods proportionate in length to what might be estimated as the reasonable duration of the buildings, a great deal of the difficulty which now exists in obtaining accommodation for the isolation of cases of infectious

disease in rural districts would disappear. The principle of adjusting the length of a loan to the duration of the object for which it is needed is generally recognised, but the Local Government Board seem to have drawn a hard and fast line in regard to composite wood and iron buildings, which they only recognise as temporary expedients for which loans should not be granted. I venture to think that this policy is not a wise one in the interest of isolation itself. So long as ordinary rural and small urban authorities are confronted by the alternative of incurring a serious annual charge on the rates, not only in obtaining sites for isolation hospitals but in constructing them throughout of either brick or stone, or of doing nothing, only a catastrophe, such as the Gloucester epidemic, will supply the pressure required to overcome the inertia which the prospect of having to spend money always generates in the parochial mind. But, if a composite wood and iron building with two, four or even six wards, and accommodation for a caretaker and one or more nurses, to be obtained when required, from the numerous nursing associations which are now scattered all over the country, could be sanctioned at a cost which might be distributed over 10 or 15 years, the opposition to providing it would not be nearly so great as it now is to larger and much more costly projects. In this as in other matters opportunism is the key to success. If we cannot get all we should like, we must take what we can get. Whilst we are waiting for sites and buildings that are ideally perfect, lives are being lost that might be saved if we had some resources, however imperfect, with which to carry on the campaign against disease.

GENERAL VITAL STATISTICS OF THE DISTRICT.

AREA AND POPULATION.—No change has taken place in these respects during the past year, but the parishes of Kemble, Somerford Keynes, Pool Keynes, and Shorncote, which have hitherto belonged to the county of Wilts, have, by an agreement between the County Councils of Wilts and

Gloucestershire, been transferred to the latter county. This change, however, only affects their highway administration ; since, for sanitary and poor law purposes these parishes have always formed a part of the Cirencester Union, and have, therefore, been included in the Combined District. A similar proposal to transfer to Gloucestershire the parishes of Long Newnton and Ashley, which are in the Tetbury Union, was not carried out, as it met with considerable opposition from the inhabitants.

BIRTHS AND BIRTH RATE.—The total number of births registered in the Combined District during the past year was 2,651, being a slight increase on that of the preceding year, and giving a birth-rate of 27·0 per thousand of the population. The lowest birth-rate (20·7) was in the Newnham Urban district, and the highest (34·3) in that of East Dean.

DEATHS AND THE DEATH RATE.—The total mortality from all causes in the Combined District during 1896, was 1,282, being a decrease of 197 on that of 1895, and gives a death rate of 13·2 per thousand, which is the lowest during the last thirteen years. During the five previous years the death rate of the district as a whole has stood at an appreciably higher rate, having been as high as 18·8, in 1891. The marked decline of last year probably represents the result of the high mortality of the previous years, in thinning out the old and feeble lives, especially during the Winter seasons.

The relations both of the birth and death-rates during this period are shown by the following table :—

1896	...	Birth-rate, 27·0	...	Death-rate, 13·2	per 1000
1895	...	„ 26·7	...	„ 16·9	„
1894	...	„ 26·8	...	„ 16·2	„
1893	...	„ 27·8	...	„ 15·1	„
1892	...	„ 27·2	...	„ 16·4	„
1891	...	„ 29·6	...	„ 18·8	„
1890	...	„ 28·1	...	„ 14·8	„
1889	...	„ 29·5	...	„ 15·4	„
1888	...	„ 27·4	...	„ 15·1	„
1887	...	„ 28·2	...	„ 15·6	„

1886	...	Birth-rate, 28·8	...	Death-rate, 15·8 per 1000
1885	...	„ 28·5	...	„ 15·9 „
1884	...	„ 28·5	...	„ 16·0 „

ZYMOTIC MORTALITY.

The separate statistics of the several forms of zymotic disease for the Gloucestershire Combined District for the year 1896, are as follows :—

SMALL POX.—

Mortality in 1896	...	...	...	...	...	16
„ „ 1895	...	...	...	...	...	0
Highest Mortality in last twenty-three years (1873)	...	...	...	...	...	33
Lowest do. (1880-3-4-9, 1890-1-2-4-5)	...	...	...	...	...	0
Cases notified in 1896...	...	...	...	...	...	100
„ „ 1895...	...	...	...	...	...	6

In my Report for 1895, which was drafted in the early part of 1896, I referred to the serious epidemic of Small Pox which had at that time established itself in the City of Gloucester, from which the infection was beginning to spread into the neighbouring Districts. Up to the end of the former year only six cases of the disease had occurred in the combined District, viz. : four in the suburbs of Gloucester and two at Chapel Hill, near Tintern in Monmouthshire. But with the commencement of 1896 the infection began to spread, especially in the suburbs of Gloucester, in which 79 cases occurred from the early part of January until the month of June. Four of these, however, were in the County Lunatic Asylum, at Wotton, and one in the Prison, both of which institutions, though technically in the Gloucester Rural District, are in no way under the control of the Rural District Council. In addition to these cases, 21 others occurred in the following portions of the Combined District : Chepstow Rural District 1 ; Chipping Sodbury Rural District 1 ; Cirencester Urban District 2 ; East Dean Rural District 12 ; Lydney Rural District 2 ; Westbury Urban District 3. In the Thornbury District, which is not included in the Combined District, though I act as Medical Officer of

Health for it, there were 7 cases of Small Pox, all of which, there is reason to believe, were traceable to infection derived from Gloucester, though it could not be directly proved. In not more than six of these 21 cases could the infection be traced direct to the City of Gloucester, and in one case it was certainly imported from Bedfordshire, but in most of the others the circumstances of the case were such as to leave little doubt that the infection primarily was derived from Gloucester. The special peculiarities of these different outbreaks will be more appropriately dealt with in the Reports on the particular Districts in which they occurred, but it will not be out of place to refer here to some considerations bearing on the subject generally.

The first is the illustration which the Gloucester epidemic offers of the effect of weakening our first line of defence against Small Pox. Even if the Report of the Royal Commission, which appeared shortly after the epidemic had ended, had not so emphatically confirmed, as it has done, the confidence in vaccination as a protection against Small Pox which the experience of a century has established, that of Gloucester during the recent epidemic would of itself have been sufficient to do so.

Take, for example, this one fact, that out of 722 children under 10 years of age who were attacked during the epidemic only 23 had been vaccinated in infancy and 699 had not been vaccinated at all. Is it possible for any person with an open mind to resist the conclusion that these numbers indicate, at least in some degree, the proportionate risks which these two classes of children run of being attacked by Small Pox if they are exposed to its infection? These numbers lead to the inference that an unvaccinated child runs, under such circumstances, thirty times as much risk as a vaccinated one.

But, if we examine the figures of the vaccinated children a little more closely we shall obtain still stronger evidence of the protective influence of vaccination. For, of the 23 vaccinated children who were thus attacked, none were less than 7

years of age, 2 were between 7 and 8 years, 9 between 8 and 9 years, and 12 between 9 and 10 years. Do not these facts fully justify the conclusion at which the large majority of the Royal Commissioners have arrived in regard to vaccination "that the protection it affords against attacks (of Small Pox) is greatest during the years immediately succeeding the operation. "It is impossible," they add, "to fix with precision the length of this period of highest protection. Though not in all cases the same, if a period is to be fixed, it might, we think, fairly be said to cover in general a period of nine or ten years."

It has been sought to explain away this difference in the proportion of vaccinated and unvaccinated children attacked in the Gloucester epidemic by assuming that these numbers represent the proportions in which these two classes of children existed in the population of the city at the time of the epidemic. That is to say, that for every vaccinated child under 10 years of age in Gloucester at that time there were at least 30 unvaccinated children. But such an assumption will not bear investigation. For, even during the years 1891-4, when vaccination of infants in Gloucester fell to its lowest point, the disproportion was never so great as that indicated by the above numbers, whilst for the five previous years it was considerably less. In 1895 the number of children who were vaccinated increased greatly, and before the epidemic was half over in 1896, more than 8,000 out of the 10,000 children who were assumed to have been unvaccinated in Gloucester in the middle of 1895 had been brought under protection. So that the difference in the numbers of the vaccinated and unvaccinated children who were attacked during the epidemic cannot be explained by the assumption that they correspond with the proportions in which these two classes of children existed in the population.

But the evidence which this section of the statistics of the epidemic affords in support of vaccination does not cease

here. If we inquire into the way in which the attack ended in these two classes, we find that in 281 out of the 699 unvaccinated children, that is, in more than 40 per cent. of them, it ended in death, whilst not one of the 23 vaccinated children died. How is this enormous difference in the fatality of the attack in these two classes to be explained? Only upon the assumption, that in these 23 children, all of whom, it will be remembered, were over 7 years of age, though the protective influence of their infant vaccination had so far diminished that they were not proof against the infection, it was still strong enough to protect them against death. It has been asserted by the opponents of vaccination that it is not only useless as a protection against Small Pox but that it so weakens the constitution as to predispose it to attack by the disease. But the relations above indicated, both as to the attack and to the fatality of the disease, are not only absolutely incompatible with such an assertion but point to just the reverse of it. Indeed, it is inconceivable how any one who will take the trouble to compare these numbers with one another could for one moment entertain such an unjustifiable inference from them.

Limitation of space prevents the illustration by other aspects of the statistics of the epidemic of this first consideration to which I wish to draw attention, but those who desire to obtain further information on the subject can do so by consulting the "Story of the Gloucester Epidemic,"* in which these and other incidents of the outbreak are fully dealt with.

The second consideration is that the experience of the Combined District shows that although where the population is sparse, as it is in most parts of the District, early vaccination and re-vaccination of all who have been in contact with the infected person, combined with effective quarantine and with such measures of cleansing and

* Published by the Jenner Society, Gloucester, price, post free, 7½d.

disinfection as are quite practicable in every case, are generally sufficient to stamp out the disease, it is of great importance to have a hospital available to which any case of the disease may be at once removed for isolation and treatment. The more concentrated the population in any district the more urgently is this provision needed. It is claimed by the opponents of vaccination that isolation itself, combined with other sanitary precautions, such as disinfection and cleanliness, are sufficient to control an outbreak of Small Pox. But, even supposing this were so, it is obviously useless to rely upon a remedy the means for applying which in an effective way do not exist. If every Sanitary District had an efficient isolation hospital at its disposal we should at any rate be in a position to see how far we could dispense with vaccination ; but until we can realise this condition of things it is idle to discuss the question. Five of the twelve authorities included in the Combined District now have some means of isolating a few cases of Small Pox. But even such a resource, valuable as it is, would be of comparatively little use unless supplemented by vaccination. For, to make these places available in case of an outbreak, without creating a fresh source of danger to the community, it is essential that every person in connection with them should be either re-vaccinated or have had Small Pox. In default of such a provision isolation is impracticable.

SCARLATINA.—

Mortality in 1896	...	...	...	...	...	...	6
„ „ 1895	...	...	...	...	...	...	3
Highest Mortality in last twenty-three years (1876)	...	...	...	...	...	...	113
Lowest ditto (1890)	...	...	...	...	...	...	1
Number of cases notified in 1896	...	...	...	...	...	...	330
„ „ „ 1895	...	...	...	...	...	...	108

The epidemic of Scarlet Fever which had commenced to be prevalent in 1895, increased considerably during the past year, making itself felt chiefly in the East Dean and

Cirencester Rural and Urban Districts, with a sprinkling of cases in those of Chepstow and Chipping Sodbury, thus repeating, in a large degree, the experience of 1894 and 1895. Fortunately the epidemic has retained the mildness of type which it has exhibited from its commencement. Indeed, a very large number of the cases have been so trifling in their character that the children have been scarcely indisposed, and it has been difficult to get the parents and friends to recognise that the attack has been one of Scarlet Fever at all. In my last Annual Report I referred at some length to the effect which this modification of the type of the disease might be expected to produce, and it is, therefore, not necessary to discuss it here.

MEASLES.—

Mortality in 1896	...	...	...	...	...	...	14
„ „ 1895	...	...	...	...	...	...	2
Highest Mortality in twenty-three years (1888)	...	...	...	...	...	...	84
Lowest ditto	„	...	...	...	...	...	2

There seemed reason for assuming at the close of 1895 that the epidemic wave of Measles which had shown the first sign of its re-appearance in 1894, with a mortality of 19, had died away again, for in 1895 the mortality fell to the exceptionally low level of 2. But during the past year there has been again a rise of the mortality to 14, accompanied by a very general prevalence of the disease. Indeed, when the number of localities which have been attacked is taken into consideration the fatality exhibited is not by any means large. I have pointed out in previous Reports that in the case of Measles, as in that of Scarlet Fever, a diminution of the virulence of the infection seems to be taking place, but it is, of course, possible that the diminished fatality of the disease may be due in some degree to the improvement which may have taken place in the care of the children, especially during convalescence. The presence, as is the case now, in so many parishes of a trained nurse must exercise a

beneficial influence in this direction, for in Measles good nursing is the first condition of successful treatment of the disease.

DIPHTHERIA AND CROUP.—

Mortality in 1896	...	...	...	...	...	19
„ „ 1895	...	...	...	...	...	11
Highest Mortality in last twenty-three years (1884)	...					65
Lowest ditto	„			(1895)	...	11
Number of cases notified in 1896	...	...	...	...		60
„ „ 1895	...	...	...	...		31

Next to the Small Pox epidemic the most important sanitary feature of the past year has been the rekindling of the epidemic of Diphtheria, which, like that of Measles, appeared to have been arrested during the previous year. The total number of cases notified in 1896 was nearly double that of 1895, and the mortality has risen again from 11 to 19, the level at which it stood in the preceding year. This recrudescence of Diphtheria in the Combined District has been most conspicuous in the Cirencester Urban and Rural and in the Gloucester Rural Districts, but it has also been equally marked in the Thornbury District, which does not belong to the Combination. In the case of the Gloucester Rural District the cases occurred almost exclusively in the parishes adjoining the City, where there was, I have reason to believe, a considerable outbreak of the disease, and I have little doubt that the diffusion of the infection was largely due to school influences. In other parts of the District, especially in the town and neighbourhood of Cirencester, I could not satisfy myself that school influence played anything more than a subordinate if any part in the diffusion of the infection. Indeed, the actual number of cases notified was not sufficiently large to make it probable that the schools were an important factor in the case. What particularly impressed me in connection with this subject was the fact that whilst for the first eight or nine months in the year, which were exceptionally fine and dry, Diphtheria was

practically absent from the District, it suddenly made its appearance about September, after the occurrence of a heavy rainfall. This was most markedly the case in the suburbs of Gloucester, where the disease exhibited in the relatively small number of children who were attacked by it a high degree of mortality. Assuming this to have been something more than a mere coincidence the connection between the two facts may have been due to one or more of three causes, viz.: (1) to the influence of moisture or the heated soil, so much of which in the neighbourhood of towns is unavoidably polluted by sewage and other similar matters, or (2) to effect of the heavy rainfall in stirring up the contents of the sewers, or (3) to the influence of the same condition in driving out the ground air out of soil, and with it the germs of the disease. In the neighbourhood of the Bristol Road, where the largest number of cases occurred, the emanations from the main sewer had been very much complained of for some time before the rain fell; but, from the fact that the disease appeared about the same time in other localities in the County where there were no sewers their influence would appear to be at the least doubtful. In all localities, too, in which the disease showed itself, except in a portion of the suburbs of Gloucester, which is to all intents and purposes a part of the City, the cases were so sporadic in their character as to suggest rather a widely spread atmospheric influence, acting upon subjects who were specially amenable to its influence, than one of a concentrated and local character affecting generally those in its immediate neighbourhood. Indeed, the experience of the past year has only confirmed the impression which I have for some time entertained that the personal factor in Diphtheria, as one ordinarily meets with it, is much more important than the impersonal one, that is to say, that the germ itself is probably much more common than is generally suspected, and that its influence in actually exciting disease is largely dependent on its having the chance to localise itself in the nose, throat, or windpipe of a child

who, by personal predisposition, as by previous attacks of congestion of the tonsils, exhibits a special receptivity for it.

It is right, before leaving this subject, to say that it is open to considerable doubt whether all the cases notified as Diphtheria during the year were cases of the genuine disease. Without the opportunity of a careful bacteriological investigation in each case it is impossible for any one to speak positively on this matter. I have on more than one occasion pointed out the desirability of provision being made for carrying on effectively this increasingly important branch of sanitary work in every sanitary district. The recent developments of bacteriology in connection with the recognition, the treatment and the prevention of infectious disease have been such as to have completely revolutionised our knowledge in regard to these subjects. The influence of vaccination in protecting those who have undergone the operation from a subsequent attack of Small Pox, which was for so many years after Jenner's discovery of it a merely empirical fact, has now been brought into line with a number of other facts of a similar kind in regard to other infectious diseases and a rational explanation of its action supplied. But these conquests of preventive medicine have been in a large degree rendered possible by the improvements which science has of late years made in the mechanical appliances for and in the modes of conducting microscopic inquiry, and it is not too much to say that a bacteriological laboratory and a bacteriologist is as essential a part of the machinery which should be available in every district for the protection of the public health as is a chemical laboratory and an analyst. How such a requirement can be most conveniently met is a question which is open to consideration. But it would seem that the authorities to whom the Legislature has delegated the provision of the one can most suitably undertake what is simply an extension of cognate work. Probably the alterations in the machinery for vaccination

which will be entailed by the general adoption of calf lymph will facilitate the solution of the problem. When the law makes it the duty of local authorities to provide calf lymph for the use of their Districts, as it is pretty sure to do, it will have taken no inconsiderable step towards inducing them to provide bacteriological institutes for this purpose.

In my Report for 1895 I referred incidentally to the use of antitoxic serum in the treatment of Diphtheria, but without being able to give any illustration of this mode of treatment from the experience of my own District. I am glad this year to be able to cite a series of 38 cases which occurred in the practice of Dr. R. C. Leonard, at Almondsbury, in the Thornbury Rural District. In these 38 cases 7 deaths occurred, but in 22 of the 38 antitoxic was used, and in only 2 of them did a fatal result ensue. In some of the 16 cases in which no injection was practised the patients were not seen until too late for it to be of any use: in others the attack was so slight as not to render it necessary; but Dr. Leonard informs me that on reviewing the whole of them he thinks it would have been better had he used antitoxin in all.

WHOOPING COUGH.—

Mortality in 1896	...	...	...	...	...	...	28
„ „ 1895	...	...	...	...	...	...	2
Highest Mortality in last twenty-three years (1886)	..						56
Lowest ditto					(1895)	...	2

I have referred, in connection with the subject of Measles, to the marked arrest of the current epidemic wave of that disease which occurred in 1895, when the mortality was only two as compared with 19 in 1894 and 13 in 1896. By a curious coincidence a similar arrest took place in the case of Whooping Cough, the mortality from which, like that of Measles, was 79 in 1894, but, like that of Measles also, fell to two in 1895, and has this year again risen to 28. Although these two diseases are perfectly distinct from and have no obvious relations to each other, epidemics of them not unfrequently follow one another, and there may be some

reason for this coincidence in their fluctuation which has not been as yet explained. Possibly it may to some extent depend on the season of the year during which they happen to be prevalent, for in both of them the fatality of the result is greatly dependent on season and temperature, being much greater in the winter and spring than it is in the summer and autumn. As neither of these diseases is compulsorily notifiable, and as one only hears much about Measles in consequence of the effect of an epidemic of it on the school attendance, and very little about Whooping Cough, as school attendance is not so apt to be affected by it, I am not able to state with precision the relations in regard to time and place which have existed between them.

CONTINUED FEVER.—

Mortality in 1896	...	...	...	...	...	...	3
„ „ 1895	...	...	...	...	...	...	17
Highest Mortality in last twenty-three years (1875)	..						57
Lowest ditto					(1894)	..	2
Cases notified...	...	...	...	...	(1896)	...	16
„ „	...	...	...	...	(1895)	...	61

When we come to examine the record of the past year in regard to Continued Fever we find ourselves on much firmer and more satisfactory ground. In regard both to the number of cases notified and to their fatality, 1896 will compare very favourably with most of its predecessors. The mortality has only been less in one year previously (1894). In 1895 it reached the exceptional height of 17. This was mainly due to the outbreak which occurred at Lydney, but in some degree also to cases of an anomalous character which occurred in other parts of the District. It is a source of some satisfaction to know that the Combined District as a whole is better prepared to meet outbreaks of this kind now than it was at that time, and we have reason to hope that such an interruption to the general freedom of the District from this type of disease as characterised 1895 will not occur again. Of the three deaths which were registered from Enteric Fever, during the year, one was that of a man in the

Chepstow Rural District, a collier, who undoubtedly imported the infection from South Wales, where it was prevalent at the works on which he had been employed. The other two were cases which occurred at the Barnwood County Asylum. So that really not a single death was referable to disease originating in the Combined District itself during the whole year. All of the 16 cases of Fever which were notified occurred in separate localities and were unconnected with one another in any way. They none of them presented any features of special interest, and some of them were, to say the least, of a doubtful character. Such a record as this of the general freedom of the District from a disease which is admitted to be as good a criterion as any of the efficiency of sanitary administration, cannot but be regarded with satisfaction. When we compare it with the experience of the year in regard to Small Pox, a disease which could be exterminated with even greater facility, if the means for so doing could be as effectually applied, we are compelled to recognise the influence which the illusions of ignorance and faddism still exercise in paralysing our efforts,

DIARRHŒAL AFFECTIONS.—

Mortality in 1896	...	..	..	...	..	..	12
„ „ 1895	...	...	...	...	...	...	19
Highest Mortality in last twenty-three years (1876)	...						56
Lowest ditto					(1894)	...	10

These affections, the significance of which from a sanitary point of view, is, as I have often pointed out, small, when the numbers are so inconsiderable as are the above, have exhibited a decline in their mortality during the past year proportionate to the increase which characterised them in 1895. It will be seen that they are nearly at the lowest level that they have attained during the last twenty-three years. This is at least good evidence of the general absence throughout the District of conditions which favour the prevalence of those two forms of Diarrhœa which are most

distinctly traceable to sanitary influences, namely the Diarrhœa of young children, and the general Diarrhœa of juveniles and adults which often precedes an outbreak of Enteric Fever.

SEPTICÆMIC AFFECTIONS.—

		In 1896.		In 1895.		In 21 years.	
		Total deaths.		Total deaths.		Highest.	Lowest.
Erysipelas	1	...	6	...	6 .. 0
Puerperal Fever		...	2	...	4	...	21 ... 1

The mortality from this class of affections is so trifling as not to call for any comment. The diminution of deaths from Puerperal Fever which has been perceptible for some years past is probably referable to an improvement in the conditions under which confinements are carried on amongst the women of the labouring classes, for which there was much room. Two deaths from Erysipelas took place, one at Cirencester and the other at Siddington. Both of them were women, and in neither could any specific cause be discovered for the attack.

Action taken to protect the health of the District during the year.

WORKS OF SANITARY CONSTRUCTION.

DRAINAGE.—As the year was closing the works for the drainage of Wickwar, which have been more than twenty years in process of incubation, have been actually commenced and will, no doubt, be completed before the ensuing summer. We may, therefore, feel some confidence that the old standing nuisance caused by the pollution of the Wickwar brook will ere long come to an end.

The Lydney drainage scheme has been seriously delayed in consequence of its protracted consideration by the Local Government Board, and of the necessity for modifying it in some respects to meet the requirements of the Board.

On the initiative of representations from the parishes of Barnwood and Wotton Without, the Gloucester Rural Council

have decided to prepare a scheme of drainage for these parishes, with possible adaptation also to meet the wants of other adjoining portions of the Rural District.

In no other part of the Combined District have any drainage works of importance been initiated during the year.

WATER SUPPLY.—The extreme dryness of the earlier portion of last year naturally accentuated in an unusual degree the difficulties of those localities which even in ordinary dry periods suffer from want of water. In the Chepstow Rural District the Council have arranged with the Great Western Railway to extend the supply which has for some years been available for the parishes of Portskewett and Caldicot to Undy. In the Lydney Rural District the Woolastone water scheme has been somewhat delayed, though a local inquiry has been held on the subject by the Local Government Board. The Lydney Parish Council also have had under their consideration the question of providing a water supply for that locality.

In the town of Newnham private enterprise has provided a constant supply of water, by a piped service, which is much appreciated.

The East Dean Rural Council have during the course of the year given a good deal of attention to the improvement of local supplies in those parts of the Forest district which are not served by the Cinderford system.

The scheme for the supply of the village of Coates, in the Cirencester Rural District, has not made much progress, in consequence of doubts as to the permanency of the proposed source of supply, in case pumping operations should be resumed at the Thames Head pumping station.

The subject of water supplies for the villages of Wick and Doynton, in the Chipping Sodbury District, has been under consideration, and in the latter case an engineer has been employed to prepare a scheme for the purpose. The West Gloucestershire Water Company have also extended their mains so as to supply a portion of the parish of Frampton Cotterell and the town of Chipping Sodbury.

ISOLATION HOSPITALS.—I have already referred to the effect which the Gloucester epidemic has had in stimulating the Local Authorities of the County generally to provide accommodation for isolation of cases of Small Pox. It is only necessary, therefore, to say here that five of the Authorities of the Combined District, viz. : East Dean, Lydney, Chipping Sodbury, and Cirencester Rural and Urban, have either taken steps for the first time to provide such accommodation or have supplemented what they previously possessed.

GENERAL SANITARY ADMINISTRATION.

LEGISLATIVE BASIS.—The general sanitary administration of the Combined District is carried on mainly under the powers conferred on Sanitary Authorities for this purpose by the Public Health Act (1875) ; the Public Health Water Act (1878) ; the Rivers Pollution Act (1876) ; and the Dairies and Cowsheds Order (1885).

These Acts are all compulsory in their operation in all sanitary districts. But in addition to these there are three other Acts, the adoption of which is up to the present optional by each Sanitary Authority. They are :—

1.—THE INFECTIOUS DISEASES NOTIFICATION ACT (1889), which makes the notification of any case of certain infectious diseases, which are specified in the Act, compulsory upon the occupier of the house in which it may occur, and on any medical practitioner who may be called to attend it. This Act has now been adopted by all the Authorities in the Combined District, at the following dates :—1889, Cirencester Rural and Urban, Westbury Rural (now East Dean) and Urban, Awre and Newnham Urban ; 1891, Gloucester Rural ; 1893, Chipping Sodbury Rural ; 1895, Lydney Rural ; 1896, Tetbury Rural and Urban, and Chepstow Rural.

2.—THE PUBLIC HEALTH AMENDMENT ACT (1890). This Act supplements in many respects the powers of the Public Health Act (1875) and contains a valuable provision by which Rural Authorities can control the construction of new houses

in their districts in regard to drainage and other matters of sanitary importance by means of bye-laws which they may make for that purpose. It has been adopted in the Combined District by the following Authorities viz. : 1891, Cirencester Rural and Urban, Gloucester Rural, Westbury Rural and Urban, Awre and Newnham Urban ; 1896, Lydney Rural.*

3.—THE INFECTIOUS DISEASES PREVENTION ACT (1890) gives Sanitary Authorities and their officers somewhat larger powers than they possess under the Public Health Act, in dealing with infectious disease, especially where a mortuary exists. It has been adopted by the following authorities in the Combined District, viz : 1891, Cirencester Rural and Urban, Westbury Rural and Urban, Awre and Newnham Urban. None of the Rural Authorities in the District who have adopted the Public Health Amendment Act have yet availed themselves of the powers granted by the Act to make building bye-laws, but some of them have Urban powers for this purpose, available in limited portions of their districts.

HOUSING OF THE POPULATION.—In regard to this matter I have very little of special interest to report. The only localities in the Combined District in which any appreciable increase in house accommodation is taking place are the suburbs of Gloucester, and the towns of Cirencester and Lydney. In most of the other parts it is either stagnant or actually diminishing. Despite all the consideration that has now been given to it of late years, the problem how to attract the labourer from the town to the country, how even to keep him from drifting from the land into the streets, is still far from being solved, or, if any solution has been discovered for it, its effect has as yet been imperceptible. In my last Annual Report I pointed out that the development of the bicycle and the motor car would probably materially help to solve the problem in the immediate neighbourhood of towns, by

* The Act has during the present year (1897) also been adopted by Chipping Sodbury Rural and Tetbury Urban.

enabling the artizans employed in them to live in the country within a reasonable distance of their work, wherever cottages to house them could be obtained. But this means of redressing the disturbed equilibrium of town and country, even if it were to be pushed to a much greater extent than it has been as yet, would have little effect in stemming the depopulation of our rural districts which has been steadily going on since Gray wrote his well-known lines—

“Ill fares the land to hastening ills a prey
Where wealth accumulates and men decay.”

Still, even in the least progressive districts, new houses are from time to time built, and I cannot but express my regret that so few of the Rural Authorities of the Combined District have availed themselves of the powers which the Public Health Amendment Act of 1890, to which reference has previously been made, places at their disposal for the regulation of those arrangements of new houses which are of a distinctly sanitary character. So large a proportion of the troubles which Sanitary Authorities are called on to set right, arise from defects in the construction of houses and their surroundings, which could have been avoided had there been any control over the houses when they were built, that it is depressing to think we are still, with all our experience of the un wisdom of so doing, continuing to sow the seeds in this way of a harvest which those who follow us will certainly have to reap.

In regard to lodging-houses, I have also little to report. The actual number of common lodging-houses in the whole of the Combined District is very small, and seems to be decreasing. There has been a good deal of discussion of late on the subject of tramps and vagrants, and the need of distinguishing between the two seems generally recognized. Possibly this may lead to something being done to municipalise common lodging-houses as a receptacle for respectable travellers, under the direct control of the Sanitary Authority, as distinguished

from the tramp wards, which might continue to be, as at present, in the hands of the Destitution Authority.

FOOD SUPPLY.—Throughout the whole of the Combined District the protection of the public against the adulteration of food is in the hands of the County Council, and neither the District Councils nor their officers have any control or responsibility in regard to it. All that these latter are required to do is to see that all food that is exposed for sale is in a state fit for consumption. Practically almost the only cases in which it has been necessary from time to time in the Combined District to seize articles of food for the purpose of obtaining their condemnation, have been those of fish, and even in these the nose of the purchaser has been generally a sufficient protection against his being induced to buy what he could not safely eat. On the other hand, it is well known that both fish and meat, especially in the canned condition, may assume a positively poisonous state without its being detectible by ordinary observation. No cases of unsound food calling for such condemnation have come under my own personal notice during the past year, but the Sanitary Inspector in the East Dean District on one occasion seized some meat at Cinderford, which a local magistrate condemned as unfit for human food. Nor have I had occasion to exercise such powers in regard to another article of food, which might readily become the means of distributing infection, and that is milk. So far as the ordinary forms of infectious disease are concerned, I have never found any difficulty in dealing with cases in which milk might be exposed to the risk of absorbing and distributing infection on the premises of a milk-seller, without invoking the special powers which the law gives for that purpose. But there is another and much more difficult form of infection to deal with, of which both milk and meat may become the vehicle, and that is the infection of tuberculosis. The inquiries which have been made during the last year or two on this subject in this country, though they do not show the percentage of cows

infected with tuberculosis amongst our dairy herds to be quite so large as it would appear to be in some parts of the Continent, especially in Denmark and Germany, where stall feeding is more general than it is with us, have demonstrated that it is sufficient to make the danger a very real one. And when we reflect that the milk of a single tuberculous cow may, if added unknowingly to that of a large number of others, effectually taint it, and thus spread the mischief far and wide, it is evidently of the first importance that all practicable means should be taken to prevent the possibilities of such an accident. The simplest means for so doing is, as pointed out in my last Annual Report, entirely within the hands of the individual consumer, who has only to effectually scald (Pasteurise) his milk to be quite sure that any infection of tubercle which it may possibly have contained will have been destroyed. Or, the protection thus obtainable may be given, and indeed, is now to some extent being given, in the metropolis and large towns of the country, by the purveyors of milk, who sterilise it themselves and supply it in this form at a slightly increased cost. But these measures, good as they are, do not strike at the root of the evil, which is in the maintenance of tuberculosed animals in ordinary herds. Up to very recent years this evil was neither suspected to exist to anything like the extent to which it does, nor, if it had been, would there have been any means of detecting and eradicating it. But, thanks to the researches of Koch, and to one of the numerous developments of the far-reaching discovery of Vaccination by Jenner, we are now enabled by the injection of tuberculin into any cow, to satisfy ourselves whether she is the subject of concealed tubercular affection or not, and to thus weed such an animal out of the dairy herd. Already the importance of this discovery is becoming recognised by the proprietors of our large dairy herds, by the leading milk purveyors, and by the public, and a movement is commencing amongst the second of the these classes to assure their customers that they only obtain their milk from

herds that have been experimentally vaccinated with tuberculin, to obtain positive evidence of their freedom from tuberculosis. But it is obvious that such a precaution as this, if it is to have any trustworthy value, cannot be safely left to commercial enterprise alone to ensure its adoption ; it must be placed in the hands of a public authority. It may probably be difficult to make it compulsory at the outset. Like all our legislation in matters of this kind, it will probably have to be organised on a tentative and optional basis at first, and the way in which such a work could be most easily initiated would be by the establishment in each county of one or more Jenner Institutes, such as I have suggested in a previous page, in which the requirements of the county in regard to this and other allied forms of work might be provided for. Gloucestershire, which gave birth to vaccination, could not erect a worthier memorial to perpetuate the name of the man by whom it was introduced than by establishing the first Jenner Institute, as a centre for the diffusion not only of those agents, which, in the shape of vaccines of various kinds, are coming to play so important a part in the protection of the public health, but of the knowledge in regard to them which is the best antidote to the infection of ignorance by which the promotion of vaccination has been so gravely obstructed in this county.

In concluding my reference to this branch of the subject, I have to report that the Bakehouses, Slaughter-houses, Daries and Milk-shops of the District have been under general inspection by the different Inspectors of the District, and have been visited by me, so far as it has been practicable to do so. The Registers of these places, which are usually in the hands of the Sanitary Inspectors, have not in all cases been kept so well up to date as they should be, especially those of milk-sellers. The names of those who have ceased to sell should be periodically weeded out, and inquiry made as to whether milk is being sold by persons who have not formally registered themselves as so doing.

OFFENSIVE TRADES.—Very few of these exist in the Combined District, and of the few which do exist no serious complaint has been made during the past year.

RIVERS POLLUTION ACT.—No case involving proceedings under the Act has occurred during the year. Grave complaints have, as in former years, been made as to the offensive condition of the Wickwar Brook, but in view of the action which the Chipping Sodbury Authority was taking to carry out the scheme of sewerage for Wickwar there was no room for other action in the matter.

THE FACTORY AND WORKSHOPS ACTS.—The generally rural character of the Combined District does not offer much scope for the exercise of the sanitary powers given by these Acts, as the factories in it, in which human labour is at all largely employed, are very few. Moreover the relative responsibilities of the Factory Inspectors and the Local Authority are somewhat confused, so that there is some overlapping of duties in the matter. Indeed, the latter body has no means of knowing where factories or workshops exist unless notified of their existence by the Inspector of Factories. I have intimated to the Inspector of my own District my readiness to act on any intimation which he may send me, of the need for so doing, and have from time to time visited such workshops as I knew existed and to which my attention had been called.

INSPECTION OF BOATS AND VESSELS.—This duty, which at any time is limited in its operation in the Combined District to that part of the Thames and Severn Canal which is in the Cirencester Rural District, is at present in abeyance in consequence of the canal being under repair.

From this general summary of the sanitary condition of the Combined District as a whole during the past year, I think it fairly appears, that whilst it has suffered in some respects more heavily than usual from infectious disease, the mortality has not been without its compensation, since it has compelled attention to requirements which I have for many years past

pressed upon the notice of the Authorities, but without effect. In other respects a good deal of substantial work has been undertaken or got into shape ; and it only remains to express the hope that the present year, as the silver commemoration of the formation of the District, may stimulate all who are engaged in its sanitary administration to additional efforts worthy of the occasion.

I am, Gentlemen,

Your obedient Servant,

FRANCIS T. BOND, M.D., B.A. LOND., F.R.S. ED.

Gloucester.

CHEPSTOW

RURAL DISTRICT COUNCIL.*

Composition of District: Parishes, &c. (39), Monmouthshire.

Portskewett, Caldicot, Ifton, Roggiett, Llanvihangel, Undy, Caerwent, Shirenewton, Newchurch East, Llanvihangel Tormynydd, Chapel Hill, Howick, Dinham, Llansoy, Llangwm Ucha, Llangwm Isha, Kilgwrrog, Itton, Mounton, Matherne, Penterry, Newchurch West, St. Pierre and Runston, St. Kingsmark, St. Bride's Netherwent, Tintern, Trellech's Grange, Wolves Newton, Llanvair Discoed, St. Arvans, St. Arvan's Grange Farm.

Sanitary Inspector: Mr. W. Williams, Chepstow.

Area, 42,878 acres.

Population (1891), 7,940.

Inhabited Houses (1891), 1,629.

The Council meets once a month at Chepstow, after the meeting of the Board of Guardians.

VITAL STATISTICS OF DISTRICT.

BIRTHS—

Males	...	...	...	...	...	...	...	...	110
Females...	...	...	...	...	...	...	...	...	116
Total	...	...	...	...	...	...	...	...	226
Ratio of Births per 1000 of population	...	...	...	...	...	...	...	...	28·4

DEATHS—

Small Pox	...	...	...	...	...	...	...	...	0
Measles	...	...	...	...	...	...	...	...	0
Scarlatina	...	...	...	...	...	...	...	...	0
Croup and Diphtheria	...	...	...	...	...	...	...	...	0
Whooping Cough	...	...	...	...	...	...	...	...	4
Continued Fever	...	...	...	...	...	...	...	...	1
Cholera, Diarrhoea and Dysentry	...	...	...	...	...	...	...	...	0
Puerperal Fever	...	...	...	...	...	...	...	...	0
Erysipelas	...	...	...	...	...	...	...	...	0
Total Deaths from Zymotic Affections	...	...	...	...	...	...	...	...	5
Total Deaths from all causes...	...	...	...	...	...	...	...	...	116
Proportion of Deaths per 1000 of population	...	...	...	...	...	...	...	...	14·6
Deaths under 5 years of age	...	...	...	...	...	...	...	...	35

* Until 1895 the Chepstow Rural District included what is now the Lydney Rural District.

CHEPSTOW RURAL.

CASES OF INFECTIOUS DISEASES WHICH CAME TO THE NOTICE OF THE MEDICAL OFFICER OF HEALTH IN 1896.

			Small Pox.	Scarlet Fever.	Croup and Diphtheria.	Typhoid Fever.	Erysipelas.	Total.
Chapel Hill	..	...	1	0	0	1	0	2
Caldicot	...	...	0	5	0	0	0	5
Shirenewton	...	..	0	0	0	2	0	2
Undy	...	...	0	4	0	0	0	4
Portskewett	...	..	0	6	0	0	0	6
Matherne	...	...	0	2	0	0	0	2
St. Arvans	...	...	0	1	0	0	0	1
Total			1	18	0	3	0	22

THE vital statistics of this District for the past year present no special interest. Both the birth and death rates are of the normal character, and very nearly the same as those for 1895.

The Zymotic mortality is exceptionally low, four of the five deaths recorded during the year being due to Whooping Cough, a non-notifiable disease, which was prevalent in the parishes of Itton, Roggiet, Shirenewton, and Matherne. The single death from Enteric Fever occurred at Chapel Hill, under circumstances which somewhat resembled the outbreak of the same disease which took place in this parish in 1895. A man who had been employed quarrying stone at Tidenham, and who lived there for the greater part of the week, but returned to his home on Saturdays and Sundays, was attacked with illness of an obscure character, which his medical attendant ultimately notified as Enteric Fever. No intelligible cause for the attack could be discovered, except the very common one of his having been exposed to cold and wet. None of the other men who worked at the quarry were attacked, nor was there any illness in the cottage in which he lodged, or at his own home, nor was there any condition connected with either place which threw any light upon the origin of the mischief. Two other cases appear in the table of notifiable disease, under the head of Typhoid, but they

were both of an ambiguous character, one, a child of four years, notified as "Influenza, Typhoid," and the other was considered by a second practitioner, who was called in consultation, not to be Typhoid at all.

The single case of Small Pox occurred in the early part of January at Tintern, and belongs to a small outbreak, which was fortunately limited to three cases. It originated in December, 1895, at Trellech's Grange, and was described in the Annual Report of last year. It will be remembered that the patient, who was an elderly man, living in a cottage on Barbadoes Hill, escaped from the care of his wife who was nursing him, and wandered into the village of Tintern, whence he was taken back by a policeman. Fortunately this escapade led to no serious results, which may be attributed to the fact that vaccination and re-vaccination had been actively pushed in the parish just previously by Dr. Kay, the public vaccinator, so that there was little opening for the infection to take hold. Had it been otherwise, there might have been a serious epidemic.

Scarlet Fever, generally of a mild type, has been somewhat prevalent, chiefly in the parish of Undy, and at Sudbrook. At the former place the infection was imported both from the neighbouring parish of Magor and from Newport.

The circumstances under which this took place in the latter case were of so flagrant a character, that the District Council decided to prosecute two of the parties inculpated, but the sudden death of one of them, before summonses were applied for, led to further action being dropped.

It is noteworthy that whilst almost every other part of the Combined District has been visited by Diphtheria, the Rural District of Chepstow has, for the last two years, been quite free from this disease. There does not seem to be any obvious explanation of this immunity, which has indeed been characteristic, in some degree, of this district for a much longer period. In regard to difference of surface level and soil, it presents as much variety as any other parts of the

Combined District, and its relations with the towns of Chepstow and Monmouth on one side, and with the much larger populations of Bristol, Newport, and Cardiff on the other, would seem to expose it as much as most districts are to the chances of imported infection.

In the general introduction to this Report, I have adverted to the fact that the Chepstow Rural District is one of the few larger areas of the Combined District which is at present altogether unprovided with any accommodation for isolating cases of infectious disease. This fact is the more to be regretted, since twice during the past twenty-four years the Authority have had to provide temporary accommodation to meet outbreaks of Small Pox, and on each occasion have retained for some time the cottages which they rented for this purpose. At that time the Lydney Division of the Union had not been separated as a distinct sanitary area, as it has since been. A proposition was made in the early part of last year by the Lydney Council, to establish with the Chepstow Rural Council a joint Hospital for infectious diseases, but the offer was not accepted. As the Lydney Council have now a Hospital of their own it is not likely to be repeated. The Chepstow Rural District will, therefore, in any case of emergency, such as an outbreak of Small Pox at Sudbrook, have to rely upon home quarantine, aided by general vaccination, or to provide a temporary place of reception at a greater cost than they have previously had to incur. I have always advocated that in dealing with this matter, even before the separation of the Lydney District, it was in the mutual interest of all parties that such a combination should include the town of Chepstow, and I regret that the Urban Council could not be induced to see things in the same light. A town which is so largely dependent for its prosperity on visitors as Chepstow is, has everything to lose by not being adequately prepared to meet such an outbreak of Small Pox as might any day occur, either inside or just outside its borders, and its combination with the Rural Council for the purpose of

jointly dealing with this contingency by voluntary arrangement would be the most satisfactory solution of the problem. Failing this, it devolves upon the Monmouthshire County Council to take it in hand.

I am glad to be able to record that the extension of the water-mains by which Caldicot has been for some years supplied by the Great Western Railway Company to the parish of Roggiett, through the enterprise of Lord Aberdare, has facilitated a scheme which has been for some time discussed, for laying them on to Undy. Arrangements for so doing are now under discussion, and I hope that before next summer any possibility of the parishioners being in such straits for water as they have been for some years past on the occurrence of a dry season, will be out of the question.

The litigation into which the Chepstow Rural Council entered with a landowner at Caerwent, since deceased, on the subject of his alleged abstraction of water from the Nedden brook, is still *sub judice*, but the issue, so far as the actual requirements of those who use the water is concerned, has been practically settled by the destruction, by the elements, of the dam by which the obstruction was caused. Possibly even if this solution of the difficulty had not occurred other circumstances might have helped to provide one.

In my last Annual Report I referred to complaints which have been made of pollution of the upper waters of the Nedden by refuse from the works, which the Newport Corporation have been for some time carrying on at Llanvacches in connection with an impounding reservoir which they are making there. This nuisance does not appear to have recurred, but there is a prospect of another mischief of even a more serious character occurring in connection with these works, and that is the diminution of the Nedden itself in consequence of the interception of its head waters by works which are being made in connection with the reservoir, for that purpose. At the time of drafting this Report, this matter is under the consideration of the Chepstow Rural

Council, and it is to be hoped that the mistake will not be made which was committed in 1888, of allowing the Newport Corporation to enter the Chepstow area for the purpose of abstracting water from it without their first giving satisfactory guarantee that the interests of the Rural District would be amply safeguarded.

I subjoin the Statement of the routine work done in connection with the General Sanitary.

DWELLING HOUSES :

Cleansed and disinfected	...	...	...	...	11
Closed as unfit for habitation	...	...	...	...	1
Repaired	...	..	...	...	9
New built...	...	...	...	...	6
Overcrowding abated	...	...	...	...	3

CLOSETS :

New, provided	...	...	...	...	7
Repaired	...	...	...	...	15
Cleansed	...	...	...	...	30

DRAINS :

Defective repaired or constructed anew	...	...	8
Offensive, cleansed	...	...	17

NUISANCES :

Offensive refuse removed	...	...	40
Animals improperly kept	...	...	11
Ditches and cesspools cleansed or covered	21

WATER SUPPLY :

Defective remedied	11
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Total ... 190

Slaughter-houses under inspection	9
Bakehouses	„	„	...	10
Dairies and Milk-shops	„	„	...	31
Lodging-houses	„	...	...	0

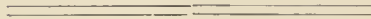
Total ... 50

Expenditure on Water Supply ... £40 0 6

In only one of the above matters were legal proceedings necessary in order to enforce the requirements of the Council. This was with reference to some dilapidated cottages at Caldicot Pill, for the repair of which an order was obtained.

The expenditure for Water Supply was mainly in connection with work undertaken in stopping swallow holes in the Matherne brook.

I have much pleasure in recording that at a meeting of the Council held in September last, the Notification of Infectious Diseases Act was unanimously adopted, thus bringing Chepstow into line, not only with the whole of the Sanitary Authorities of the Combined District, but with almost the whole of those of the country.



CHIPPING SODBURY RURAL DISTRICT COUNCIL.

Composition of District: Parishes (23) of Chipping Sodbury, Old Sodbury, Westerleigh, Pucklechurch, Wapley, Dodington, Dyrham, Abson and Wick, Doynton, Cold Ashton, Marshfield, West Littleton, Tormarton, Acton Turville, Great Badminton, Little Sodbury, Horton, Hawkesbury, Alderley, Wickwar, Yate, Frampton Cotterell and Iron Acton.

Sanitary Inspector: Mr. J. B. Adams, Marshfield.

Area 63,284 acres.

Population, 1891, 16,795. In 1881, 17,530.

„ Annual decrease, 73.5.

Inhabited Houses, 1891, 3835.

No Sanitary Committee: Sanitary business dealt with at the fortnightly meetings of the District Council.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						Highest No. in 23 years.	Lowest ditto.
					1896.		
Males	...	...	...	...	212	313	201
Females	...	...	...	...	220	300	201
Total	...	...	...	...	432	601	415
Ratio of Births per 1000 of population ...					25.6	32.2	24.6
DEATHS—							
Small Pox and Chicken Pox	...	...	...	...	0	1	0
Measles	...	...	...	...	3	19	0
Scarlatina	...	...	...	...	0	27	0
Croup and Diphtheria	...	...	...	...	3	22	0
Whooping Cough	...	...	...	...	4	11	0
Fever	...	...	...	...	0	13	0
Cholera, Diarrhoea and Dysentery	...	...	...	...	2	11	1
Puerperal Fever	...	...	...	...	0	*—	—
Erysipelas	...	...	...	...	0	*—	—
Total Zymotic Deaths	...	...	...	...	12	57	11
Total Deaths from all causes	...	...	...	...	219	401	219
Proportion of Deaths per 1000 of population					13.4	21.4	13.4
Deaths under 5 years of age					45	127	45

* In earlier Reports Puerperal Fever and Erysipelas were grouped together.

CHIPPING SODBURY RURAL.

CASES OF INFECTIOUS DISEASES NOTIFIED DURING 1896.

	Scarlet Fever	Croup and Diphtheria	Typhoid Fever	Puerperal Fever	Erysipelas	Small Pox	Total
Little Sodbury	0	0	1	0	0	0	1
Doynton ...	0	0	0	0	0	1	1
Frampton Cotterell	0	0	0	0	1	0	1
Iron Acton ...	0	0	0	0	1	0	1
Wick ...	2	1	0	0	0	0	3
Marshfield ...	1	0	0	0	0	0	1
Hillesley ...	0	1	0	0	0	0	1
Pucklechurch ...	0	1	0	0	0	0	1
Yate ...	6	2	0	0	0	0	8
Wickwar ...	8	0	0	0	0	0	8
Hinton ...	1	0	0	0	0	0	1
Westerleigh ...	3	1	0	0	0	0	4
Nibley ...	2	0	0	0	0	0	2
Shortwood ...	1	0	0	0	0	0	1
Coldashton ...	0	1	0	0	0	0	1
	24	7	1	0	2	1	35

THE birth-rate for this district during the past year has again fallen slightly, and has almost reached the lowest level which it has attained during nearly a quarter of a century. What is more satisfactory is that the death-rate of the year is also lower than it has been any year during that period. The mortality, too, of children under 5 years of age has been exceptionally low, especially in view of the fact that Measles, Whooping Cough and Scarlet Fever have been prevalent in the district. It is noteworthy in regard to these diseases, that whilst there were 24 cases of Scarlet Fever notified during the year, there was not a single death from this disease; but out of seven cases of throat affection notified there were three deaths. All of these three, however, were notified as cases of "membranous croup." They were all unconnected with one another, and were not traceable to any obvious cause. Three other cases were notified as "diphtheric throat," a term which the Notification Act does not recognise, and one only as "diphtheria." These last four cases, like the three fatal ones of membranous croup, all occurred in different localities,

at different times, and in houses in which there were other children, who apparently were unaffected. The only one which was distinctly notified as Diphtheria was certainly not a severe one. Cases such as these illustrate very well the extreme importance of being able to confirm or negative the accuracy of the diagnosis of Diphtheria from general symptoms by a bacteriological examination. The question whether Sanitary Authorities might effect a saving of a few half-crowns by such a means of control is of no importance whatever compared with the relief which would be often afforded both to the medical attendant and the friends of the patient by being assured that although the case might have exhibited some of the characteristic symptoms of the genuine disease the essential element of it was wanting. Nothing can be more unsatisfactory than the present condition of this question. It is not to be expected that an ordinary general practitioner, with his time already heavily mortgaged by the numerous claims which his practice makes on it, should undertake inquiries which demand expensive appliances, and special training for their satisfactory conduct; and even if Medical Officers of Health were not, as a rule, similarly handicapped, it is no part of their duty to revise the notifications which they receive from their professional brethren. But it is perfectly competent for the Sanitary Authority to provide, either by itself, which would in the case of all but large Urban Authorities, be impracticable, or by combination with other similar bodies, as might be done through the interposition of the County Council, a means of checking the diagnosis in these cases, which competent Authorities assure us cannot be done except by a proper bacteriological equipment. The same remarks apply to Typhoid Fever, the uncertainty about the diagnosis of which is a frequent source of confusion in the statistics of this disease. The whole machinery for dealing effectively with these two diseases is out of gear at present in consequence of the recent development of our knowledge in regard to them, and of the difficulty in diagnosing them from naked eyed observation alone. The

medical attendant, in order to save himself from the possible charge of having overlooked in its early stage a case which may eventually turn out to be Diphtheria, or because he sees a white patch on the throat, which he has been taught to consider certain evidence of that disease, notifies it as such. The case is formally visited by the Officers of the Sanitary Authority, often at considerable expenditure of time, which might be used to more advantage in other ways ; it is formally communicated to the District Council ; a local scare is often engendered, and the statistics of Diphtheria for the district are unduly swollen by a case which, perhaps, clears up altogether in twenty-four hours after the notification has been posted. Now, if with the notification could be also posted a swab from the patient's throat, which could be promptly examined at an official centre for such a purpose, and the diagnosis thus verified, the notification might be sent by the medical attendant and accepted by the representative of the Sanitary Authority as provisional only until it had been thus confirmed.

Only one notification of Typhoid Fever has been received during the year, and this was the case of an adult man at Little Sodbury, and was in some respects obscure. No cause could be discovered for it : he made a good recovery, and no extension of the mischief occurred.

Whooping Cough has been prevalent at Marshfield and Chipping Sodbury, four deaths having occurred from it at those places, but there is no means of knowing how many cases existed. Measles have also been epidemic in Frampton Cotterell and Iron Acton, in both of which places the schools were closed, and at Westerleigh, two deaths being recorded from the disease at the first of these places and one at the last.

The existence of the epidemic of Small Pox at Gloucester during the early part of the year, and of cases of the disease at Bristol, made it very probable that the Sodbury district would be visited by it. In order to meet such a contingency the District Council decided to acquire two cottages in a very suitable situation, so far as isolation and centrality are con-

cerned, on Sodbury Common, within a mile of Chipping Sodbury. The position, though more limited than is generally desirable, in regard to the actual area available, is so excellent in other respects that I had no hesitation in advising the Council to acquire it, if only for those reasons, and because, although the cottages could not be made available for use without spending upon them almost as much as they were worth, it had been found, as the result of a good deal of previous inquiry, that no other site at all comparable with this one could be obtained in any other part of the district. This course was decided on in the month of April, a lease of the place, with option to purchase, was arranged, and towards the close of the year the cottages had been repaired and reconstructed, at a cost of about £130. But they are still not ready for occupation, as provision needs making for drainage, a good road to them, and for furnishing. These matters are, however, in the hands of a Committee appointed specially for the purpose, and no doubt will be taken in hand with due diligence. It is only necessary to point out that if any serious outbreak of Small Pox had happened to have established itself in the district during the year, the action taken in regard to these premises would have been of no use in meeting it. Providentially, no infection was imported, either from Gloucester or Bristol, as was anticipated, but a case did occur during the autumn, the infection of which came from a very different quarter. A young lady came down from Buckinghamshire to stay with some friends at their residence near one of the villages in the district, and failed to inform her friends that her sister was at that time suffering from what her medical attendant had informed the family was only an attack of ordinary Chicken Pox, for which no special precautions were thought necessary. In about a week after her arrival, this young lady developed an eruption which both I and the medical practitioner who was called in to attend her had no difficulty in recognising as an attack of modified Small Pox. The Hospital on the Common was then quite unfit to receive the case, so the only thing to

be done was to hospitalise the house, which fortunately lent itself very conveniently for the purpose. The illness was a comparatively trifling one, and all practicable precautions being taken, no extension of the mischief occurred. After a quarantine of six weeks, the young lady returned home to her family, better than when she left. But a good deal of trouble, expense and local panic was thus created by an oversight which certainly ought not to have been committed. This is not the first case of the kind which has come under my observation, and the best excuse for such mistakes which can be offered, is that these mild cases of Small Pox occurring in young persons who have been vaccinated only in infancy, are often extremely difficult to be recognised with certainty, especially at an early stage, even by a practitioner who has had ample experience of the disease. But, so effective has vaccination been in reducing the frequency of Small Pox outbreaks in this country, that the greater number of the younger members of the medical profession have had no opportunity of seeing a case of the disease at all. I understand that this defect will be removed in the new curriculum through which the rising generation of doctors will have to pass, and if the anti-vaccinist agitation, which has been making such way in the country in recent years is not checked, acquaintance with the appearance of the Small Pox eruption will not, in the future, be so rare as it has been for the last quarter of a century.

The Wickwar Drainage Scheme has succeeded in dragging its slow length along through another dry summer, to the great annoyance and irritation of everybody living near, or even having to pass by the Wickwar brook. But, as I have already intimated in the general introduction to this Report, the Works have now been commenced, and will, it is hoped, be in working order before next summer. It is important to note that in the early part of the year the Local Government Board decided, as a result of the inquiry held at Wickwar in 1895, not to form a special drainage area, so that the cost of the Works will have to be borne by the whole parish.

In the month of July, an application was received from the Doynton Parish Council for assistance from the District Council, in promoting a scheme for obtaining water for the village. It is some years since I called the attention of the then Sanitary Authority to the pollution of the stream from which a portion of the village derives its water supply, but nothing was done. I am glad now to be able to report that the Parish Council were authorised to employ an engineer by whom a very practicable scheme has been submitted at a moderate cost, which has received the approval of the District Council, and all that is now necessary is to apply to the Local Government Board for a loan, upon which a public inquiry will be held, when the scheme can be fully explained, examined, and discussed by everyone who is interested in it.

Complaints having been made of insufficient Water Supply in the village of Wick, I was instructed by the District Council to inquire into the matter and advise them in regard thereto. I found that the deficiency mainly affected some new houses which have been erected during the last few years, and have been dependent for their supply on a well which ceases to be available in severe drought. The well itself is at some little distance from the houses, and it is open to question whether, when the houses were built, which was since 1878, they should have been passed as complying with the provisions of the Water Act of that year in having a proper supply of water for drinking purposes. A good pipe supply could be provided for the whole of the village, at a comparatively small cost, and would, I think, be generally appreciated ; but when the Parish Council, who first moved in the matter, learned that the cost of carrying out the work would have to be defrayed by a rate on the whole parish, they ceased to press it, and apparently nothing is likely to be done, unless the District Council themselves take the question up. It is very important that the provisions of the Public Health Water Act (1878) in regard to the occupation of new houses should be systematically enforced. There has been some

laxity in this respect in this district hitherto, but the Council have lately decided to enforce the Act in all cases, and have published formal notice of their intention to do so.

I am glad to report that during the past year the West Gloucestershire Water Company have made material progress in extending their mains in this district. These mains now pass through the parishes of Frampton Cotterell, Yate, and Chipping Sodbury, from which they are being extended to Old Sodbury.

In my last Annual Report I referred to the fact that the District Council had had under their consideration the adoption of the Public Health Amendment Act, 1890, but that they had postponed any action in the matter. During December notice was given of intention to re-open the question, and I trust that on fuller consideration the Board will decide to adopt the Act,* as it will give them important powers in regard to the control of new buildings and also of the sewage works at Wickwar when completed.

I have received from Mr. Adams, the Sanitary Inspector for the District, the following summary of the work done in connection with the routine Sanitary Work for the year.

Dilapidated houses repaired	...	...	...	...	2
Defective drains	„	...	...	...	26
Pig nuisances removed	...	...	...	...	17
Offensive refuse	„	...	...	...	29
Dilapidated closets repaired	...	...	...	...	3
Foul ditto cleansed	...	...	...	...	8
New ditto constructed	...	...	...	...	4
Parish pump repaired	...	...	...	...	1
New parish pump erected	...	...	...	...	1
Dairies inspected	...	...	...	...	51
Bakehouses ditto	...	...	...	...	25
„ ordered to be cleansed	...	...	...	...	1
Slaughter houses inspected	...	...	...	...	8
Village pond cleansed	...	...	...	...	1
Petroleum licences applied for	...	...	...	...	9

None of the matters referred to above involved any legal proceedings or call for any special comment.

* The Board have now (March, 1897) adopted the Act.

CIRENCESTER RURAL DISTRICT COUNCIL.

Composition of District : Gloucestershire—Parishes (39) of
 Sapperton, Edgeworth, Duntisborne Abbots, Duntisborne Rouse, Winstone, Syde, Brimpsfield, Elkstone, Colesborne, Rendcombe, North Cerney, South Cerney, Bagendon, Daglingworth, Baunton, Stratton, Coates, Rodmarton, Siddington, Preston, Harnhill, Driffield, Barnsley, Ampney Crucis, Ampney St. Peter, Ampney St. Mary, Poulton, Down Ampney, Maiseyhampton, Kempsford, Fairford, Quenington, Hatherop, and so much of the parish of Cirencester as is not included in the jurisdiction of the Cirencester Urban Authority ;
*Wilts—*Kemble, Pool Keynes, Somerford Keynes and Shornecote.

Sanitary Inspector : Mr. W. B. Harner, Cirencester.

Area—Glos., 77,019 ; Wilts., 6,625. Total, 83,644.

Population (1891) „ 12,077 ; „ 880. „ 12,957.

Inhabited Houses (1891), 3,039 ; „ 222. „ 3,251.

Sanitary Committee meets every alternate month, and sanitary business is taken at the fortnightly meetings of the District Council when necessary.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						Highest No.	Lowest
						in 23 years	ditto
1896.							
Males	...	...	...	...	148*	254	151
Females	...	...	...	...	170	242	150
Total	...	...	...	...	318	496	305
Ratio of Births per 1000 of population						33·9	23·5
DEATHS—							
				Glo'ster.	Wilts.		
Small Pox and Chicken Pox				0 ...	0	1	0
Measles				2 ...	0	15	0
Scarlatina				0 ...	0	7	0
Croup and Diphtheria				2 ...	1	17	0
Whooping Cough				0 ...	0	8	0
Fever				0 ...	0	5	0
Cholera, Diarrhoea, and Dysentery				0 ...	0	7	0
Puerperal Fever				0 ...	0	—††	—
Erysipelas				1 ...	0	—	—
Total Deaths from Zymotic Affections				5 ...	1	29	6
Total Deaths from all causes				†120...	15	303	155
Proportion of Deaths per 1000							
of population				9·2...	17·0	17·9	10·4
Deaths under 5 years of age				22...	5	92	14

* No detailed return of Births for the different parts of the whole District is received.

†† In earlier reports these Diseases were grouped together, and it would be difficult now to ascertain their *maxima* and *minima* during the past 23 years.

† To these deaths have to be added 15 more, which occurred in the Union Workhouse and Cottage Hospital, Cirencester, of persons belonging to the Rural District.

CIRENCESTER RURAL.

CASES OF INFECTIOUS DISEASES NOTIFIED DURING
THE COURSE OF THE YEAR 1896.

Gloucestershire.	Small Pox.	Scarlet Fever.	Typhoid Fever.	Croup and Diphtheria.	Puerperal Fever.	Erysip- elas.	Total.	Removed to Hospital
Coates ...	0	4	0	0	0	0	4	1
Driffild ...	0	1	0	0	0	0	1	1
Ampney Crucis	0	7	1	0	0	2	10	3
„ St. Peter	0	7	0	0	0	0	7	6
Daglingworth	0	1	0	0	0	0	1	0
Stratton ...	0	6	0	0	0	0	6	1
Rodmarton ...	0	1	0	0	0	0	1	0
Preston ...	0	1	1	0	0	0	2	1
South Cerney..	0	7	0	1	0	1	9	5
Poulton ...	0	1	0	6	0	1	8	2
North Cerney	0	1	0	0	0	1	2	0
Siddington ...	0	11	0	0	0	1	12	4
Barnsley ...	0	8	0	0	0	0	8	7
Bagendon ...	0	0	0	0	0	1	1	0
Duntisbourne } Abbotts }	0	4	0	0	0	0	4	0
Elkstone ...	0	3	0	0	0	0	3	0
Total	0	63	2	7	0	7	79	31
Somerford } Keynes }	0	5	0	1	0	0	6	4
Kemble ...	0	0	0	1	0	1	2	0
Poole Keynes	0	0	0	1	0	0	1	0
Total Wilts	0	5	0	3	0	1	9	4
„, Gos.	0	63	2	7	0	7	79	31
	0	68	2	10	0	8	88	35

THE most striking feature of the vital statistics of this district for the past year is the remarkably low mortality, giving a death-rate for the whole district of 10·4, being the lowest reached during the 24 years since the first formation of the district. This diminution of mortality is not confined to the Cirencester area, but will be seen to present itself in some of the other sections of the Combined District. In the previous year, on the other hand, the death-rate was almost as much above the

average for the last 23 years as it was last year below it. These fluctuations are in some degree due to the variation in child mortality, which has been unusually low during the past year, notwithstanding the prevalence of Measles, Scarlet Fever and Diphtheria in the district. The zymotic mortality, consisting as it does of only six cases, is also the lowest attained during the same period. Amongst these six cases, one was of a somewhat unusual character, viz. the death of an old woman, who lived at Siddington, at the age of 74, from Erysipelas. Such an event is comparatively rare in my experience. The great majority of cases of Erysipelas that are notified are, if not of a trivial character, at any rate not of a nature to call for the interposition of the Sanitary Authority, and death from the disease in an uncomplicated form is unusual. In the case in question the feebleness of old age appears to have succumbed to an attack which was not otherwise severe. Although Small Pox existed in the town of Cirencester during the progress of the Gloucester epidemic, the Rural District was fortunate enough to escape the importation of the infection into it, except so far as this was involved in the removal of two cases from the town to the temporary Hospital which had been provided by the Urban and Rural Authorities at South Cerney.

The Cirencester Rural District has for some years been nearly free from diseases of a Diphtheric type. But towards the end of the year Diphtheria began to show signs of an epidemic tendency. It first made its appearance in a farmhouse at Pool Keynes, in the person of a lad 15 years of age, who lived with his parents at Stroud, but came up to stay with his grandfather there. The lad made a good recovery. Whatever the affection may have been, the infection of it was almost certainly brought from Stroud. But within a few days afterwards, two children living in a dilapidated old cottage in the village of Poulton, were attacked. The nature of the disease was not suspected by the parents, and a doctor was not sent for until some days after the children began to

ail, and when the youngest of them was dying. The other child was at once removed to the Hospital, and recovered. There had been no connection of any kind between these cases and the preceding one, so that their occurring so closely in succession to one another must be looked on as only a coincidence, or perhaps, as an illustration of the epidemic tendency to which I have referred. In this instance the general conditions in which the children lived, especially the small, ill-ventilated and not over clean cottage, were such as to make an outbreak of the disease no subject for surprise ; but there was also, what is even more important still as conducing to such an outbreak, a distinct history of family predisposition to throat mischief. Within a few days after the notification of these cases, a woman, 50 years of age, living at a little distance from the village of Poulton, was also notified as down with the disease. It appeared that she had been nursing one of the two cases just referred to. She was at once removed to the Hospital, and recovered. A fortnight afterwards two other children, living in a new and well-constructed house at the west end of the village, were attacked. The friends objected to the removal of these children to the Hospital, and they soon recovered, two other, children in the same family being unaffected. About the same time a fifth child, living in a cottage at the opposite end of the village, was notified as suffering from the affection, but the attack was a mild one in this case also, and convalescence was soon established. On making inquiry into the state of things in the village, I found that there was evidence of a distinct tendency to sore throat having been prevalent for some time before these cases occurred, but it was not considered of any special importance, and as a matter of fact in no other cases was it thought necessary to call in medical assistance. Probably this would not have been done in the last three cases had it not been for the scare that was created by the death of one of the children who was first attacked. The history of this small outbreak seems to illustrate a state

of things which is by no means uncommon. A general tendency to throat mischief makes its appearance in a locality probably owing to close personal contact of two or more children in the parish school. After a week or two it may die out and nothing more may occur. But if it happen to find its way into a family in which there is a marked predisposition to throat mischief, it may suddenly assume a distinctly Diphtheric type.

About the time that the first cases occurred in Poulton, a child, 4 years of age, was attacked by the disease at Somerford Keynes, and died, but another child in the same house was unaffected. There was no clue discoverable as to the source of the infection in this case. With the commencement of the present year the disease made its appearance in a more marked manner still in the parishes of Harnhill and Driffield, but the details of this outbreak belong to the sanitary history of 1897, and I only refer to them here to show the existence at this time in this part of the Cirencester Rural District, of an unquestionable epidemic influence, which if not in all cases actually Diphtheritic in character, readily assumed that character under favourable conditions: those conditions being in the great majority of cases personal, rather than connected with insanitary surroundings. None of these cases were treated with antitoxin, and indeed, some of them were not of a nature to suggest the expediency of using it. At the same time, I am glad to report that on my suggesting to the Rural Council the desirability of facilitating the use of this agent, especially in the treatment of cases of Diphtheria occurring in the practice of the District Medical Officers of the Union, it was resolved to supply it in such cases gratuitously. This is the first instance in the Combined District in which a Sanitary Authority has decided to provide antitoxin in cases where neither the patient nor the medical attendant could be expected to do so as an ordinary means of treatment, and I hope that other Authorities in the District will follow the example thus set by the Cirencester Rural Board.

Only two cases of Typhoid Fever were notified during the year—one at Preston, in the person of a lad of 19, and the other at Ampney Crucis, in a boy of 9. They were both of them of a mild type, and were not removed to the Hospital. No obvious cause for the attack could be discovered in either case.

During the course of the year 68 cases of Scarlet Fever were notified, of which 33 were removed to the Isolation Hospital. The epidemic, which was generally of a very mild type, not a single death having occurred from the disease, was pretty evenly distributed over about half of the district, viz. the 19 parishes which are nearest to the town of Cirencester. As there were a considerable number of cases of the disease in the town during the year, it looks very much as if the infection had been diffused from it as a centre, and it certainly was so in some cases.

In my Report for 1895 I referred to a scheme which had been proposed by some of the leading residents in the village of Coates, for supplementing the deficiencies of that village in regard to water. In the month of February, a Local Government inquiry was held on the matter, and it seemed as if there was every possibility of the scheme being brought into active operation without much delay. But twelve months have elapsed, and the realisation of this desirable object seems almost as far off as ever. The proposal was founded on the utilisation of a well on the Trewsbury Manor, about the sufficiency of which there seemed to be no doubt; but difficulties ensued in regard to obtaining the right to use this water, and it became necessary to arrange for sinking a well for the purpose of procuring an independent supply. This raised the question of how far a permanent supply could be depended on in case pumping operations were resumed at Thames Head; and at this point the scheme is at present suspended.

During the course of the summer complaints were made of nuisance arising from the sewage farm belonging to the

Cirencester Urban District at South Cerney. This was caused in a large degree by an accumulation of sludge from the tank, which, under the influence of the heat, had become very offensive. The position of the tank is such, being close to a highway, that any annoyance from it would be perceptible to everyone passing by, and it is, therefore, the more important that the occupier of the farm should exercise care in cleaning the tank out when the wind blows from the road, and that he should remove the sludge at once to a sufficient distance to avoid complaint of nuisance from it. This the Urban Council have given instructions to be done.

In some other parts of the district very marked improvements have been made in regard to water supply. Thus Mr. Biddulph has carried on to Rodmarton the main by which he pumped water from the spring at Jacaments to Tarlton. The lack of water in this hill district has not been so serious since the pumping operations at Thames Head have been suspended ; but in exceptionally dry seasons, such as that of last year, the need of it has been in some places very great, especially for farming purposes. The supply of water to the village of Barnsley has also been much improved by Mr. Wykeham Martin.

I have previously referred to the joint action taken by the Cirencester Urban and Rural Councils to provide a place for the reception of cases of Small Pox, in the shape of two adjoining cottages in the parish of South Cerney. The position of these cottages was not by any means all that could be desired for such a purpose, as they were within a few yards of a main road. But it was the only place that could be obtained in the district that was at all suitable for the purpose, and it proved very useful in providing for the isolation of two cases which occurred in the town almost immediately after the cottages had been cleaned up and put into repair. After the Gloucester epidemic had ceased, and when the ordinary Isolation Hospital was filled with cases of Scarlet Fever, the question was mooted as to whether the

South Cerney building could be employed for the purpose of supplementing the accommodation of the other Hospital for general cases of infectious disease. I felt obliged to advise, that assuming that it could be effectually disinfected, which I think is quite practicable, there would probably be great difficulty in inducing persons to consent to be removed to a place which was so closely associated with Small Pox as these cottages had been. Moreover, there were other difficulties in the way of such a course, so that the Hospital is not now occupied except by a caretaker. As the two Authorities have taken the cottages on a lease, they will still be available for use in isolating any case of Small Pox that may occur in either district, but the arrangement would be an inconvenient one to work, and, in consequence, the suggestion has been made of either enlarging the present Hospital or building a new one on a more suitable site. The matter has not yet been formally discussed, and it is possible that when it is, other questions may crop up between the two Authorities which may tend to complicate it.

Very little in the way of structural work in connection with drainage has been done in the district during the year. The drainage of Stratton has been improved by laying down a new sewer in Albion Street, which was much wanted, and some amendments have been effected at Poulton and Fairford.

Mr. W. B. Harmer, the Sanitary Inspector for the District, has supplied me with the following summary of the work done in connection with the abatement of nuisances for the past year.

HOUSE ACCOMMODATION .

Existing houses cleansed, repaired, or re-constructed...	12
Houses closed	4

EXCREMENT DISPOSAL :

New closets constructed	14
Existing closets repaired or re-constructed ...	10
Closets foul, cleansed	54
Carried forward ...	94

	Brought forward	...	94
DRAINAGE :			
New drains constructed	...	...	3
Existing drains repaired or re-constructed	...	...	9
Existing drains foul, cleansed	...	...	16
Cesspools constructed or cleansed	..	..	3
WATER SUPPLY :			
Water supply provided	..	...	2
Existing supply improved	...	...	2
Well repaired	...	...	1
INFECTIOUS DISEASES :			
Infected premises disinfected or cleansed	...	...	14
Schools closed on account of Infectious Disease	...	...	3
ANIMALS, KEEPING AND SLAUGHTER OF :			
Pig or other Animal Nuisance abated	...	...	28
Offensive refuse removed	...	...	23
Dairies, Cowsheds, and Milk-shops registered in district			44
HUMAN HABITATION :			
Cases of Over-crowding dealt with	...	...	6
OTHER MATTERS DEALT WITH :			
Watercourses cleansed	...	...	5
CASES UNDER INSPECTION AT CLOSE OF YEAR	...	...	9
Total			262

None of the above cases call for any special notice or involved legal proceedings.

CIRENCESTER URBAN DISTRICT COUNCIL.

Composition of District: Nearly co-extensive with the Parish of Cirencester.

Sanitary Inspector and Surveyor: Mr. T. Hibbert.

Assistant Sanitary Inspector: Mr. J. Williams.

Area: 2,633 acres (about).

Population in 1891, 7,441.

Inhabited Houses, 1891, 1,655.

Sanitary Committee meets once a month, and at other times when necessary.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						1896.	Highest No. in 23 years.	Lowest ditto.
Males	...	...	...	...	...	86	126	70
Females	..	...	...	...	...	97	116	76
Total	...	...	...	...	...	183	242	157
Ratio of Births per 1000 of population						24·5	32·0	20·9
DEATHS—								
Small Pox	...	...	...	...	...	1	0	0
Measles	...	...	...	...	...	0	10	0
Scarlatina	...	...	...	...	...	1	4	0
Croup and Diphtheria	...	...	...	...	...	3	3	0
Whooping Cough	...	...	...	...	...	0	14	0
Fever...	...	...	...	...	...	0	8	0
Cholera, Diarrhœa and Dysentery	...	...	...	...	...	0	14	0
Puerperal Fever	...	...	...	...	...	2	—†	—
Erysipelas	...	...	...	...	...	0	—	—
Total Deaths from Zymotic Affections						7	37	3
Total Deaths from all causes						*106	197	94
Ratio of Deaths per 1000 of population...						14·2	28·1	12·6
Deaths under 5 years of age						22	93	22

CASES OF INFECTIOUS DISEASE NOTIFIED DURING 1896.

	Small Pox.	Scarlet Fever.	Croup and Diphtheria.	Typhoid Fever.	Erysipelas.	Puer- peral.	Total.
Removed to Hospital	2	31	1	0	0	0	34
Not removed	0	10	10	1	10	1	32
Total	2	41	11	1	10	1	66

* In addition to the 107 deaths recorded above, there were 15 deaths in the Union Workhouse, and in the Cottage Hospital of persons not belonging to the Cirencester Urban District,

† In earlier reports Puerperal Fever and Erysipelas were grouped together. It would be difficult now to separate their *maxima* and *minima* for the last 23 years.

CIRENCESTER URBAN.

THE general statistics of this district for the past year are very satisfactory. Thus, whilst the birth-rate, which in 1895, touched the lowest point to which it has fallen during the past 23 years, has risen from 20·9 to 24·5 per thousand persons living, the death-rate has fallen slightly, from 15 to 14·3 per thousand. This latter result is the more striking, because all the notifiable forms of disease have been present in the town during the year, in a higher degree than usual, Scarlet Fever, Croup and Diphtheria having been specially prevalent. But Measles and Whooping Cough have been absent, and these two diseases, when epidemic, are the main sources of infant mortality.

The most noteworthy events of the year, from a sanitary point of view, are the importation of Small Pox into the town, during the period of the Gloucester epidemic, and the unusually large number of cases of Croup and Diphtheria. In both of the Small Pox cases the infection could be traced to Gloucester. One case, which was a particularly sad one, was that of a young organist, who lived in Gloucester, but who was in the habit of coming up from Gloucester to Cirencester for a professional engagement. He had been vaccinated in infancy, but had postponed being re-vaccinated, though he had been urged by his friends to undergo the operation. He was taken ill at one of the hotels in the town, but was at once removed to the temporary Hospital at South Cerney, the repairs of which had fortunately just then been completed, so that it was available for his reception. His case was a severe one, but he appeared to be making fair progress when fatal symptoms supervened at the critical period of maturation of the eruption, and death ensued. The second case was that of a male tramp, aged 29, who entered the vagrant ward at the Workhouse. He had lodged a fortnight

previously at a common lodging-house in Gloucester, where the disease existed. As soon as the nature of the case was recognised, he was at once removed to the South Cerney Hospital, where he eventually made a good recovery. His case was not a severe one. He stated that he had been vaccinated in infancy, but no marks could be discovered. On the recognition of each of these cases active steps were taken, by cleansing and disinfection of the premises on which they occurred, and by the vaccination and re-vaccination of all who had been within range of infection, to limit its influence, and with perfect success, as not another case occurred in the town afterwards.

Forty-one cases of Scarlet Fever have been notified during the year. For the first six months of the year the attacks occurred in an intermittent way, with intervals of freedom between them. But towards the end of the year they followed one another in succession pretty rapidly. These relations of the attacks to one another are shown in the following tabular statement of their occurrence in the several months of the year. I have also inserted a note of the cases of Diphtheria and Membranous Croup which have been notified during the year. It will be seen that all of these three diseases were chiefly prevalent during the autumn, and that, with the exception of a case of Membranous Croup, which occurred in March, the town exhibited no evidence of the existence of the affection until October, in which month, and in November, the bulk of the cases of Croup and Diphtheria occurred. It is clear, therefore, that the infection was not imported into the town from the Rural District, in which Diphtheria did not make its appearance until December.

Monthly prevalence of Scarlet Fever, Diphtheria, and Membranous Croup. The numbers indicate the cases of each disease.

January	...	Scarlet Fever 6	..	Diphtheria 1
February	...	None.		
March	...	Scarlet Fever 3	...	Membranous Croup 1
April	...	,,	1	

May	...	None.					
June	...	Scarlet Fever	4				
July	...	„	1				
August	...	„	6				
September	...	„	4				
October	...	„	4	...	Diphtheria	2	... Croup 2
November	...	„	9	...	„	5	
December	...	„	2	...	„	1	

I was able to satisfy myself that two of the middle-class schools in the town were, to a certain extent, responsible for the spread of the infection of Scarlet Fever, both in the town and in the rural district, and the principals, with whom I communicated on the subject, exhibited every willingness to take such precautions as were practicable to prevent the diffusion of the infection amongst their pupils. The very mildness of the affection, however, made it difficult to do much in this way, as the symptoms were in some cases so trifling that it was not easy, even for a medical man, to recognise the true nature of the affection. The majority of the cases of Diphtheria occurred as single cases, mostly in households where there were other children who were unaffected. In one case only, two members of one household, a mother and child, were attacked. In no case could any specific cause for the attack be discovered, except the existence of a previous liability to throat affection. None of the cases could be traced to school influence. One child died from Diphtheria and two from Membranous Croup.

Only one case of Typhoid Fever was notified during the year, that of a young man who was in lodgings in the town as a student at the Agricultural College. The symptoms were somewhat doubtful, and his medical attendant decided to send him to his own home in order that he might be better nursed than he could be in his lodgings. No clue could be discovered to the cause of his illness in the house in which he was residing in Cirencester; and as he had only left home a short time before he began to ail, the origin of it may have occurred there. But no satisfactory information on the point could be obtained.

Two deaths from Puerperal Fever were registered during the year, one of which appeared to have been due in a great degree to the imprudence of the patient herself, the other to natural causes.

One death occurred from Erysipelas, not traceable to any specific cause. Like the corresponding case in the Rural District to which I have referred, this one was that of a woman 65 years of age, who developed erysipelas of the face after being out in the fields digging potatoes.

The Isolation Hospital belonging conjointly to the Urban and Rural Authorities has been more largely used during the past year than usual, especially towards the end of it, when the prevalence of Scarlet Fever and Diphtheria in both Districts strained its resources to the uttermost. The total number of cases admitted into it was 72, of whom 39 were from the Rural and 33 from the Urban District. This is a reversal of the proportions which have obtained with regard to the use of the hospital by the two Authorities during previous years.

I have referred in my Report on the Cirencester Rural District to complaints which have been made during the past summer of a nuisance arising from the sewage farm at Siddington. This was in some degree attributable to the exceptionally dry season, which by delaying somewhat the sewage in the mains made it more offensive when it arrived at the outfall. But it could have been to a large degree reduced had the tank been cleaned out with more judgment and the sludge at once removed or deodorised and covered up with earth. It is unfortunate that this tank and the distributing arrangement generally was placed so close to a public thoroughfare, especially as it is on the side of it from which the wind chiefly blows ; but I have no doubt that with reasonable care it can be kept in such a condition as to avoid any ground of serious complaint. It is, of course, impossible that a sewage farm can be as free from smell as an ordinary piece of arable or meadow land, and it is only fair to say that

in this very neighbourhood I have at times smelt an effluvium from silage, which was quite as bad as anything from the sewage farm.

The ordinary routine work of inspection during the year presents no feature of special interest. The 17 milk shops and 10 slaughter-houses have been kept generally in a satisfactory condition. Of the two lodging-houses, one has been very much improved, the other is not at all satisfactory. It represents a sample of the worst cottage property in Cirencester, and though I daresay the occupier keeps it as well as is practicable, the premises are so defective that they cannot be kept as clean and free from objection as such a place should be.

Mr. T. Hibbert, the Sanitary Inspector and Surveyor for the District, has furnished me with the following summary of the work done in his department during the year.

1. HOUSE ACCOMMODATION :

Houses closed and demolished	10
Ditto cleaned and repaired	3
Cases of overcrowding dealt with	2
Plans for new houses approved	17
„ alterations to existing houses	14

2. EXCREMENT DISPOSAL :

New closets constructed	2
Foul closets cleansed	9
Urinals repaired	1
Defective slop arrangements altered	1

3. DRAINAGE :

Yard surfaces repaired	1
Stable nuisance through defective drainage rectified... ..	1
Drains and gullies repaired	10

4. INFECTIOUS DISEASE :

Infected premises cleansed and disinfected	15
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5. KEEPING OF ANIMALS :

Offensive accumulations removed	4
--	---

CASES UNDER INSPECTION AT CLOSE OF YEAR ... 3

STATUTORY NOTICES SERVED 10

The closure and demolition of houses referred to in the above statement relates to some dilapidated houses in Cricklade Street, for the repair or closure of which the Authority

obtained a Magistrate's order in 1895. These houses have now been removed, and the space occupied by them will be used to better advantage.

Some trouble has arisen during the year in connection with two of the public sewers, one of which was so faultily laid that it became necessary to take it up and relay it, so as to bring it into better relations with the general system. In the case of the other, a block at one point caused leakage into the surrounding soil, and led to the pollution of several wells.

In conclusion, I am glad to endorse again the opinion which I have so often expressed in previous Reports, as to the thoroughly efficient way in which the sanitary administration of this picturesque and enterprising town is conducted. The increase in the house accommodation of the town, which is being effected both on the Ashcroft estate and at Watermoor, the public spirited outlay made by Earl Bathurst and the local Council in carrying out the improvement now being effected in Castle Street, the acceptance by the Council of the responsibility of carrying on the public Swimming Bath, and the contemplated purchase of the Waterworks, are all striking illustrations of the energetic and enlightened spirit with which the citizens of Cirencester regard their duties both to themselves and their successors.

Total 114

GLOUCESTER RURAL.

CASES OF INFECTIOUS DISEASES NOTIFIED DURING THE YEAR.

	Small Pox.	Scarlet Fever.	Croup and Diphtheria.	Typhoid Fever.	Erysip- elas.	Puerperal Fever.	Total
Gloucester Suburbs	59	1	10	0	1	0	71
Matson	3	0	0	0	0	0	3
Children's Hospital	0	1	7	0	0	0	8
Sandhurst... ..	1	0	1	0	1	0	3
Longford	0	1	0	0	1	0	2
Upton	1	2	1	0	0	0	4
Tuffley	3	3	0	0	0	0	6
Elmore	0	1	0	0	0	0	1
Hempstead	1	0	0	0	0	0	1
Wotton	0	0	5	0	0	0	5
County Asylum (Wotton)	4	0	0	3	0	0	7
Churchdown ..	2	0	0	0	0	0	2
Hucclecote ...	2	0	0	0	0	0	2
Barnwood	1	0	0	0	0	0	1
H.M.'s Prison ...	1	0	0	0	0	0	1
Brockworth ..	0	2	2	0	0	0	4
Longlevens ...	3	0	0	0	0	0	3
Total ..	81	11	26	3	3	0	124

THE most noteworthy feature in the vital statistics of this district during the past year is the decline of the birth-rate, which has, steadily falling for several years, almost reached the lowest point attained by it during the last twenty-three years. With the exception of the small district of Newnham, it is the lowest for the past year in the whole of the Combined District. This is the more striking, because although the bulk of the district is essentially rural in its character, there is a considerable and increasing section of it which is composed, not merely of the suburbs, but to a large extent of what is to all intents and purposes a portion of Urban Gloucester. Whilst the population of the rural part of the district may have been stationary, or even retrogressive for some years past, that of the suburban part must have been steadily increasing.

In view of this fact, and also of the circumstance that the population of the district, as a whole, has been raised by the increase of its suburban portion, probably beyond even the rate of increase at which I have estimated it, the decline of the birth-rate is more remarkable. It has, of course, to be borne in mind that more than a tenth of the population of this district is composed of the occupants of the three Asylums, the Gaol, and St. Lucy's Hospital, who ought, strictly speaking, to be deducted before estimating the birth-rate. But there are difficulties in the way of doing this with exactness, and I have preferred to let the figures stand as they are. The same explanation will, of course, apply in some, though not to an equal degree, to the low death-rate that has generally characterised this district, which has during the past year risen from 10·1 per thousand persons living in 1895, to 13·3. In fact the mortality for last year, low as it is, almost reached the highest point that it has attained for the last 23 years. But that point was reached some years ago, when the population was much smaller than it is, and consequently gave a higher rate.

The feature in the sanitary history of the district for the past year, which dwarfs all others in importance, is the visitation which it experienced from the great epidemic of Small Pox, by which the city and immediate neighbourhood of Gloucester were ravaged. In my last Annual Report I referred to the fact that in the months of November and December, 1895, four cases of the disease had occurred in the suburbs of the city. In January a fifth case was notified, in February eight more occurred, and from that time until the 28th of June there was a continual stream of 77 cases, making with the four of 1895, a total of 81 cases in all.

Of these 81 cases, 64 were in the suburbs of the city, which I have assumed for this purpose to be within one mile of the city boundary; 12 were in country parishes; 4 in the Wotton Asylum; and 1 in Her Majesty's Gaol. The suburban localities which were affected, together with the cases

occurring in them, were, Tudor Street, 14; Granville Street, 13; Painswick Road and Coney Hill, 7 each; Hartington Street and Cemetery Road, 4 each; Longleavens, Tuffley Avenue, Old Tram Road and Bristol Road, 3 each; and Sandhurst Road, Seymour Road and Stroud Road, 1 each. Twelve cases occurred in the following country parishes, viz: Matson, 3, Hucclecote, Churchdown and Tuffley, 2 each; and Barnwood, Upton St. Leonards and Hempstead, 1 each. It will be seen that 36 out of the 64 suburban cases occurred in what is known as the South End District, on the west side of the Small Pox Hospital, and within half a mile of it. The preponderance of the attacks in this part of the suburbs was, no doubt, due in some degree to the influence of the Hospital as a centre for the diffusion of infection, but more to the fact that this part of the district is, for all practical purposes, a portion of the city with which it is in intimate relations. The twelve cases which occurred in the country parishes were mostly traceable to Gloucester; so that, so far as the Rural District is concerned, the epidemic illustrates very well the intimate connection and common interests which exist between the Urban and Rural Districts in regard to infectious diseases generally, and which should lead them to combine in taking effective steps to deal with them. It is from the City that infection is generally imported into the rural districts round it. Of the 76 cases which occurred in the Rural District proper, 6 were admitted into the City Hospital, viz., 2 in 1895 and 4 in 1896. Two of the latter were sent into the Hospital direct, by the Medical Officer of Health of the City, during the height of the epidemic; but some weeks before that time the City Authorities had notified to the Rural Council that the claims of their own district were so pressing that they were unable to accommodate any of the cases from the Suburbs, and after that time only one case was removed, that of a girl from Coney Hill, quite at the close of the epidemic, when there was ample room in the Hospital. As it was thus impossible to isolate either the

suburban or the country cases in a hospital, the only practicable course was to hospitalise the houses in which they occurred, and do the best that could be done to isolate them in this way. To make this as effective as possible the Rural Council undertook to provide food and medical attendance for the sick, as well as for all the members of infected families, who were thus quarantined; and in the country districts this action was followed by complete success, as in no case did the infection spread in any of the country cases from the house which it first attacked. In the Parish of Hucclecote the leading parishioners, acting through the Parish Council, made a special effort to meet the emergency by obtaining possession of two isolated cottages, which they were prepared to equip if required. Fortunately, only two cases occurred in the parish, and these had been dealt with before this action was taken, so that the cottages were not required to be used. Some difficulty in regard to financial matters might have arisen had this been done, for the legal powers even of District Councils to provide hospital accommodation for their districts are not so clear as they might be, and there are none to authorise separate parochial action in the matter.

With reference to the four cases which occurred in the Wotton Asylum, and which, with the single case in Her Majesty's Prison, have to be included in the Rural District, though these institutions are actually both of them within the City boundaries, no distinct clue was obtained as to how the infection found its way into these buildings, but, as in both cases, there was a good deal of unavoidable communication between them and the City, through attendants and officers, it is easy to understand how infection may have been introduced in ways that could not be detected. On the other hand there were cases of the disease outside of, but within a sufficient distance of, both institutions to account for possible infection by aerial diffusion. Both of these incidents, but especially that of the Asylum, offer remarkable proofs of the protective power of vaccination. In the case of the Gaol only

one person out of about 100 was attacked, he being one of a few prisoners who had not been re-vaccinated at the time ; all the others who were at once re-vaccinated, escaped, as well as the warders, who lived in the City, and were as much exposed to infection as most people. At the Wotton Asylum a body of residents, numbering nearly 700, escaped unscathed, with the exception of the four cases noted, although the infection was unexpectedly introduced amongst them. But the Superintendent immediately took energetic steps to re-vaccinate the whole of the inmates, and with such successful results that only one case occurred afterwards, and that was in a young woman whose re-vaccination did not take, and who was, therefore, supposed, though as the event proved, erroneously, to be immune. The Barnwood Asylum, with about 400 inmates, and Barnwood House with more than 100, had neither of them a single case.

Of the 81 persons who were attacked 67 recovered, and 14 died, giving a fatality for the whole number of 17·2 per cent. Of the 14 deaths 2 were of persons vaccinated only in infancy, and over 40 years of age ; 8 were unvaccinated, of whom 4 were under 10 years of age, and four were doubtful, that is to say they were cases which were said to have been vaccinated in infancy, but in whom no vaccination scars could be found. The age relations of these three classes are shown in the following tables, the first of which shows the age incidence of the attacks :—

	Under 10 years.	10 to 20 years.	20 to 40 years.	Over 40 years.	Total.
Vaccinated in infancy only	2	11	31	9	53
Unvaccinated	13	2	3	0	18
Doubtful	1	2	5	2	10
	<hr/> 16	<hr/> 15	<hr/> 39	<hr/> 11	<hr/> 81

The mortality of these cases was as follows :—

	Under 10.	10 to 20.	20 to 40.	Over 40.	Total.
Vaccinated in infancy only	0	0	0	2	2
Unvaccinated	4	1	3	0	8
Doubtful	1	2	1	0	4
	<hr/> 5	<hr/> 3	<hr/> 4	<hr/> 2	<hr/> 14

The *fatality* of these deaths, *i.e.*, the proportion of those who were attacked and of those who died in each class, was as follows :—

	Under 10 years, per cent.	10 to 20 years, per cent.	20 to 40 years, per cent.	Over 40 years, per cent.
Vaccinated in infancy only	0	0	0	22·2
Unvaccinated 	30·7	50	100	0
Doubtful 	100	100	20	0

These statistics are interesting, not only for the evidence which they afford of the protective value of vaccination on their own account, but for the light which they throw on the statistics of the epidemic as a whole, and on the criticisms which have been directed against them by the opponents of vaccination. It will be seen in the table of attacks that out of the 53 persons vaccinated only in infancy 2 were attacked who were under 10 years of age, the numbers above that age increasing markedly up to 40 years, when they fall off materially, for the simple reason that the number of persons above 40 in the population, as a whole, is itself a greatly diminished one, and therefore we should expect that the number of attacks above that age would show a falling off. Both of the 2 vaccinated cases under 10 years of age had reached the age of 8 years, and their attacks were very mild. On the other hand, in the unvaccinated class, 13 out of 18, or 72·2 per cent. were under 10 years of age. The relations of the figures in the doubtful class seem to indicate that they probably, in most cases, had been vaccinated in infancy.

It is a stock argument with the opponents of vaccination that its inutility is proved by the fact that so large a proportion of the attacks in any outbreak have to be classed as “vaccinated.” But what is the true explanation of this? It is that those who have been thus attacked were “vaccinated *only in infancy*.” Now the claim that is made for infant vaccination is, not that it protects entirely against an attack of Small Pox through life, but that for the first 10 years of life it gives a protection against attack which is of a very high degree, and one which is almost absolute against death.

These numbers very strongly support that contention. For, amongst the whole 53 vaccinated cases there are only 2 deaths, and they were of persons over 40 years of age. And if we throw in with them the 10 doubtful cases we only get 6 deaths out of 63 cases, as against 8 out of 18 in the unvaccinated class.

A good deal has been made of the statement that in the Gloucester epidemic there were a large number of cases, over 200 according to some assertions, in which persons were attacked after having been re-vaccinated. In the 81 cases under consideration there were only three in which this question was involved. Two women, of the ages of 33 and 47 respectively, had been re-vaccinated, one within 9 and the other within 6 days of being attacked. In both cases re-vaccination was effected during the time that the disease was incubating (14 days), and in both the attack was of an extremely mild nature. In a third case, that of a middle-aged man, who had a mild attack, it was claimed that he had been re-vaccinated a short time before, but no proof could be obtained that the operation had been successful, and there were substantial reasons connected with the case which made the report very doubtful.

If the statistics of the above 81 cases are compared with those of the whole epidemic, including the City and Suburban cases, it will be found that the average mortality was lower in the rural cases than in the whole epidemic in the proportion of 17·2 to 21·7. This difference can be accounted for by the fact that the proportion of cases vaccinated in infancy only was larger in the Rural District than in the whole epidemic, the great bulk of which (95 per cent.) occurred in the City proper. As has been shown above, the mortality in such cases is much less than in unvaccinated cases. The vaccinated cases in the Rural District were 66 per cent. of the whole number attacked, whilst in the whole epidemic there were only 60 per cent. At the same time that the fatality was diminished in the Rural District from this cause, it was

increased in the City by the larger proportion there of attacks of unvaccinated children, whose mortality helped greatly to swell the death-rate of the epidemic as a whole.

Considerations of space render it impossible here to deal with other points in which the cases in the Rural District throw light upon the statements which have been adduced by the opponents of vaccination, to explain away the obvious fact that the epidemic, as a whole, would never have developed as it did had there not been such a large number of unvaccinated children in Gloucester, and had not re-vaccination, as well as vaccination, been so much neglected amongst the older portion of the population.

Directly the existence of the epidemic in the City was recognised, active steps were taken to promote vaccination and re-vaccination in all parts of the Rural District. These were prosecuted with most success in the parishes furthest from Gloucester, where the influence of the anti-vaccination agitation had been less felt than in its immediate neighbourhood, and especially in the suburbs. It is to this cause that the non-extension of the epidemic into the rural parishes is to be attributed. In some of the parishes nearly the whole of the inhabitants were accounted for as having been vaccinated or re-vaccinated.

The length to which this account of the Small Pox epidemic has run, which is justified by its intrinsic importance, and by its relations to the much larger outbreak of which it formed a part, makes it necessary to refer very briefly to other incidents of the sanitary history of the past year in this district. Noteworthy amongst these is the fact that during the prevalence of Small Pox the district was singularly free from other infectious diseases. For the first six months of the year, exclusive of Small Pox, only 8 notifications of notifiable disease were received by me, viz.: 2 of Scarlet Fever at Longford, 4 of Diphtheria, in February, at the Children's Hospital, and one of the same disease, in April, at Sandhurst, and one case of Erysipelas. This is

certainly a record for the district, whatever may be the explanation of it. It has been contended by the opponents of vaccination that an epidemic of Small Pox is only one way in which Nature exacts her average tribute of disease and death in liquidation of the offences which man commits against her laws. This is a theory which is more specious than substantial; but the experience in question might appear appropriate. There is, however, I suspect, a much more likely explanation to be found in the exceptionally bright, dry, and generally healthy weather which we enjoyed during nearly the whole of this period. However this may be, it is a fact that, with the exception of the cases of Diphtheria at the Children's Hospital and at Sandhurst, alluded to above, no trace of throat affection of a serious character was known to exist in the district until the 6th of September, when the case was notified of a nurse at the Children's Hospital, who appeared to have caught it from a patient whom she had nursed in the City. On the 12th of September another case was notified in the Bristol Road, and from that time until the end of the year 19 additional cases of the disease came to my knowledge. They were scattered about in different parts of the district, but most of them occurred either in the suburbs of Gloucester, which were immediately connected with the City, or in localities not actually forming part of the Gloucester urban population, but not far removed from and in close relation with it. Only two of these outbreaks exhibited a severe type; one in the Bristol Road, in which two children, in different families, died with the most startling rapidity, and one in the Sandhurst Road, in which two other children also died, after removal to the Children's Hospital. The only clue which I could discover as to the origin of the infection in these cases was the probability of its having been derived, in some of them at any rate, from the City, through school influence. The disease did at the time exist in the City, and I have little doubt that, in the case of the Bristol Road outbreak, the infection was derived from the school in the city

which the children attended. It is, however, noteworthy that, as I have before mentioned, this epidemic tendency to throat mischief made itself first conspicuously evident, not only in the neighbourhood of Gloucester but in other parts of the Combined District, almost immediately after the heavy rains which occurred in July and August, following, as they did, the long drought of the early part of the year. I cannot but think that it is to this fact that we must look for a clue to the origin of this mischief, and probably to the liberation from the soil by the rain of the germs of the disease, which had been incubating there. But in this, as in so many other outbreaks which have come under my observation, the way in which the infection appeared to select one or two members of a family of children, leaving the others unaffected, was very striking. In some of these cases, especially in those at the Children's Hospital, antitoxin was used, but not so freely as it might have been. The need of the means of readily obtaining it, and also of procuring a confirmation of the diagnosis of the disease itself was much felt in connection with all these cases.

In other respects the district has been generally very free from notifiable disease. Only three cases of Typhoid Fever were notified during the year, and these were, all of them, at the Second County Asylum, two of them being fatal. About a dozen cases of Scarlet Fever, all of them of a mild type, occurred during the year in scattered localities. Apart, therefore, from the outbreaks of Small Pox and Diphtheria, each of which was very exceptional in character, the health of the district during the past year has been remarkably good.

A great deal of the time of the District Council has been occupied with the consideration of a scheme for the sewerage of what it is proposed to call the North End District, consisting of parts of the Parishes of Barnwood and Wotton Without, which has been prepared by Mr. Fletcher Trew, of Gloucester. The scheme also provides for the sewerage of Churchdown and Longford, but the need for it in these two parishes is not

so pressing as it is in the others. A Government inquiry into the scheme was held in Gloucester during the month of November, when the Inspector intimated a general approval of it, except in regard to the outfall arrangement, which he considered insufficient in size, and objectionable on account of its liability to occasional floods.* To meet this requirement will involve considerable additional expense. The Council have applied for powers to borrow £10,000, which, they are advised, will well cover the whole of the probable cost. There was a good deal of opposition to the scheme at the inquiry, partly founded on the alleged unsuitability of the proposed outfall, which, it was contended, should be on the Severn, below Gloucester, instead of above it, as at present contemplated. Such an arrangement would, it was argued, provide for the drainage of the East End District, and also for that of the village of Hempstead, which latter place is now beginning to feel the need of a proper system of sewerage to meet the conditions necessary for developing its land for building purposes.

No further progress has been made during the past year in providing hospital accommodation for the district. The Small Pox epidemic occurred just at the time when negotiations were going on between the Urban and Rural Authorities for the removal of the present City Hospital to some locality in the Rural District where an efficient hospital could be erected, suitable for the requirements of both districts. The epidemic itself sufficiently demonstrated the unsuitability of the present hospital, in regard both to equipment and site, and the City Council have lately secured a site in the Rural District, on which it is understood that they propose to place the hospital buildings which they are removing from the present site. They have as yet made no communication to the Gloucester Rural Council as to their intentions in this matter, but it is hardly to be supposed that they contemplate

* Since then a formal communication to this effect has been received from the Local Government Board, requiring another site for the outfall, and also consenting to the creation of a special drainage district.

establishing an isolation hospital in the Rural District, without offering the Rural Council the opportunity of combining with them in making such provision as is necessary to meet the requirements of both of their districts.

During the course of the summer very serious complaints were made of the insufficient and defective nature of the water supplied from the Hempstead Waterworks to the South End District. I have every reason to believe that the proprietors of these works did their best to meet with the difficulties with which they had to contend ; but, even at ordinary times, the supply is not a satisfactory one, and it is to be hoped that now the City has completed its scheme for supplementing its previous supply, by pumping from Newent, the City Council will give effect to the promise which they have made to supply this district with water from their own mains.

Great complaints were also made during the summer, of the offensive emanations from the gullies and ventilating holes in the Bristol Road, connected with the joint sewer • belonging to the Urban and Rural Authorities in this district. The cause of this nuisance was, in a large degree, due to insufficient flushing, in consequence of the defective supply of water, from the cause to which I have just referred. There was some effort made to connect the outbreak of Diphtheria, which occurred in this district in September, with these emanations ; but I could not satisfy myself that any such connection existed, for this, if for no other reason, that Diphtheria was prevalent at the time in other places where no sewers existed.

The routine work connected with the general supervision of the district during the past year is represented by the following summary, which has been furnished to me by Mr. F. Weaver, the Sanitary Inspector of the District :—

DWELLING HOUSES :

Plans for new houses presented and passed	...	...	96
Dilapidated houses repaired	...	...	2
Overcrowded houses dealt with	...	...	8
Infected houses cleansed and disinfected	...	...	54

CLOSETS AND CESSPOOLS :

Defective, repaired	...	...	...	...	...	1
Foul, cleansed	...	...	...	...	...	2

DRAINS :

Defective, repaired or re-arranged	...	...	...	...	13
Disconnected from ditches	...	...	...	...	14
Foul ditches cleansed	...	...	...	...	3

WATER SUPPLY :

New, provided	2
Defective, remedied	3
Cases under notice	5

Pig Nuisances abated	1
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Dairies and Milk Shops under inspection	42
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Bakehouses	„	„	8
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EXPENDITURE :

Roads and footways constructed and made good						
(private improvements)	£357	0	0
Other structural works	...	...	...	36	9	8
				£393	9	8

The expenditure on roads and footways, referred to above, relates to one of the streets in the South End District, which was in a deplorable condition, having been laid out for building before the Council possessed bye-laws for regulating these matters. After a great deal of delay the Council served notices on the owners of the property on each side of the street to do the work, with an intimation that, in case of their failing to do so, it would do it for them. This latter course was adopted, and the street is now as creditable as it was previously the reverse. There are other roads and streets in the suburban portion of the district which equally need taking in hand, but, unfortunately, the delay in transferring to the Rural Council the powers of the Highway Board creates great difficulty in dealing with them.

LYDNEY

RURAL DISTRICT COUNCIL.

Composition of District: The Parishes of Lydney, Aylburton, Alvington, St. Briavels, Hewelsfield, Lancaut, Tidenham, and Woolaston.

Sanitary Inspector: Mr. W. Williams, Chepstow.

Area, 24,634 acres.

Population (1891), 8119.

Inhabited Houses (1891), 1693.

The Council meet monthly at Chepstow, but the sanitary work of the parish of Lydney is carried on by a Parochial Committee which meets at Lydney.

VITAL STATISTICS OF DISTRICT.

BIRTHS—

Males	...	...	...	...	...	...	...	...	130*
Females...	...	...	...	...	...	...	...	...	119
Total	...	...	...	...	...	...	...	...	249
Ratio of Births per 1000 of population	...	...	...	...	...	...	...	...	30·0

DEATHS—

Small Pox	...	...	...	...	...	...	...	...	0
Measles	...	...	...	...	...	...	...	...	0
Scarlatina	...	...	...	...	...	...	...	...	0
Croup and Diphtheria	...	...	...	...	...	...	...	...	3
Whooping Cough	...	...	...	...	...	...	...	...	7
Continued Fever	...	...	...	...	...	...	...	...	0
Cholera, Diarrhœa and Dysentery	...	...	...	...	...	...	...	...	1
Puerperal Fever	...	...	...	...	...	...	...	...	0
Erysipelas	...	...	...	...	...	...	...	...	0
Total Deaths from Zymotic Affections	...	...	...	...	...	...	...	...	11
Total Deaths from all causes...	...	...	...	...	...	...	...	...	116
Proportion of Deaths per 1000 of population	...	...	...	...	...	...	...	...	14·2
Deaths under 5 years of age	...	...	...	...	...	...	...	...	35

*As this District was only formed as a result of the Local Government Act, of 1894, by a combination of the Gloucestershire Parishes of the Chepstow Poor Law Union, it is not possible to make the same comparison of statistics as in the case of the other Districts.

LYDNEY RURAL.

CASES OF INFECTIOUS DISEASE NOTIFIED IN 1896.

	Small-pox	Scarlatina	Croup and Diphtheria	Typhoid Fever	Erysipelas	Total
Lydney ..	0	0	5	2	0	7
Aylburton	0	0	0	1	0	1
Alvington...	2	0	0	0	0	2
Tidenham...	0	1	3	0	0	4
St. Briavels	0	0	0	0	1	1
	<hr/> 2	<hr/> 1	<hr/> 8	<hr/> 3	<hr/> 1	<hr/> 15

THE vital statistics of this district for the past year call for no comment. They closely approximate to those of the previous year, the birth-rate being a trifle lower and the death-rate a little higher, but in neither case do they differ materially from what the rates for an average healthy and prosperous district should be. In the Zymotic mortality for 1895, Typhoid Fever played the dominant part, in consequence of the outbreak of that disease which occurred at Lydney. During the past year there has not been a death from this disease, indeed, the Zymotic mortality for the year would have been very small if it had not been for Whooping Cough, which was especially prevalent at Lydney, St. Briavels and Tidenham. This year, if we may judge from the experience we have already had in the earlier portion of it, the dominant factor in this group of diseases will be Measles, and then in 1897 and for a year or two after, we shall in all probability have a marked decline in this group of affections, until a new generation of children has grown up, upon whom Scarlatina and Measles and Whooping Cough will swoop down as before, but with increasingly different effect. For, partly owing to the control which we can exercise over the first of these diseases and partly to the

modification of its virulence which it has exhibited of late years, we have been able to regard it as much less destructive in its ravages than it used to be; and though the gross number of cases in a period of four or five years is, perhaps not much less than the number of children who used to be attacked by it in each of its periodic visitations, the aggregate mortality is considerably diminished. In the case of Measles or Whooping Cough, on the other hand, there is no apparent diminution in the volume of the attacks, nor, except, perhaps, to some degree in Measles, in the intensity of the infection. In both these diseases, too, it is practically impossible for the Sanitary Authority or its officers to do much to stop the progress of the infection and little, if anything, in guarding against fatal consequences. It would be easy to make a show of activity in this direction, but from past experience I feel assured that it would be little better than a pretence. There is only one form of action which in my opinion would be of any material use in helping to lessen the severity of these two diseases, and that is the employment by the Sanitary Authority of a well-trained nurse to visit every house in any district in which either of them might be prevalent, for the purpose of teaching the mothers how to treat the children so, as to avoid prejudicial results. An intelligent, kindly woman, trained for this work, could easily do what no man can effect. Whenever a case of either affection made its appearance in any locality she would be appealed to as a matter of course and by taking up her abode for a time in the affected locality she would be able to do all that is practicable to control the ravages of these diseases, the medical treatment of which is in ordinary cases a mere matter of routine, which any intelligent woman could, with a little training, undertake. For it is not a question in this case of putting an unqualified woman in the place of a qualified medical practitioner. In the large majority of cases a doctor is not called in at all, or, if he is, it is too often when the case has gone too far for his services to be of any avail, Whereas if they were under the eye of an intelligent nurse

from the first, she would be able to advise the parents when danger was really imminent and when the aid of a skilled adviser was necessary. I hold that for such purposes as these, one or more trained nurses are a necessary element of the staff of any well-equipped Sanitary Authority, and that the duty of providing them as well as the power of so doing should be explicitly recognised by the legislature.

The Lydney District, in common with most of the other parts of the county that are much in relations with Gloucester, felt the effect of the epidemic of Small Pox in the Cathedral City, though scarcely in the way that might have been anticipated. For my own part, I was in continual expectation of hearing that the infection had found its way into the town of Lydney, which, from the size of its population, its two railway lines, its water communications and the disregard of vaccination which has grown up there of late years, is particularly open to an incursion of Small Pox. But by a dispensation of Providence, for which we cannot be too thankful, it was spared this calamity. Should it have occurred it is not pleasant to think of what would probably have been said in explanation of any serious outbreak which might have occurred here. If Gloucester, with its water supply and drainage, which, until last year, were generally regarded as fairly satisfactory, all things considered, for a town situated as it is, has been branded by unscrupulous fanatics as "filthy," what epithet in the anti-vaccination vocabulary would have sufficed to designate the sanitary condition of a town which at present has neither water supply nor a system of sewerage which has any pretensions to perfection? As good fortune would have it, however, the very small outbreak of the disease which did occur in the district was limited to the village of Alvington. The case first notified was that of a farmer living in a farmhouse at some little distance from the village, but having relations with an inn in the village, which was kept by relatives, and also with a brother residing in the Monmouth Rural District. The patient declared that he had not been to Gloucester for

some weeks, but his brother, who he admitted had a slight eruption, had visited him and both of them had been at the inn. All practicable precautions, including re-vaccination of the other inmates of the farm, were taken and the infection was stamped out. But on visiting the inn I found that another brother of the patient and also a servant girl both exhibited evidence of a trivial eruption, which had been pronounced by the medical attendant of the family to be only chicken pox, for which it might certainly have been mistaken, if it had occurred in children instead of adults. I felt little hesitation, however, in view of the abundant experience we had had in Gloucester of similar eruptions, due to modified Small Pox, occurring in persons whose infantile vaccination had not lost much of its protective influence, in dealing with these persons as cases of mild Small Pox. The man was at the time I saw him practically well, and the affection of the servant girl was so slight that I fear, although I insisted on treating her case as one of Small Pox, I did not convince either her or her employers that it really was one. Such isolation as was practicable was prescribed and instructions were given, and so far as could be discovered, followed, to prevent travellers from being admitted into the house. There is no statutory power to close a public house under such circumstances, and one can only trust to the publican's own sense of responsibility and to his fear of possible legal penalties, to carry out instructions, obedience to which is of itself sufficiently damaging to his business. However, I am glad to say that no extension of the outbreak occurred in this locality, and I have no knowledge of any cases elsewhere which could be traced in any way to it.

As a result of this outbreak and of a realisation of the unpreparedness of the district to meet another of a more serious character, if one should occur, which seemed very probable, as the Gloucester epidemic was then increasing by leaps and bounds, the District Council resolved to provide a hospital expressly for Small Pox, in some part of their district.

But difficulty was experienced in finding any building which was at all suitable for the purpose, and negotiations for one which might at some little outlay have been adapted, fell through on the point of price. At last a site was obtained which, all things considered, was as suitable as could be found in any other part of the district, and an iron building, lined with wood, consisting of two wards, holding six beds each, was erected as soon as was practicable. Fortunately no other case of Small Pox occurred in the district after it was completed, and it was used, later on, with great advantage, for the isolation of a case of Typhoid Fever which occurred at Lydney

It seems a pity that a building which has cost about £400, which has not been used for Small Pox and may not be required to be used for this disease for some years to come, should be lying unused, and I have advised the Council that I see no objection to its being used for the reception of cases of either Diphtheria or Typhoid Fever, as the infection of these diseases is not persistent and can, with reasonable certainty, be eradicated, even from a building lined with matched-boardings, by very practicable means; but that if cases of Scarlet Fever are introduced into such a building, though it might by copious spraying with an effective disinfectant, such as mercuric chloride or formalin, be perfectly disinfected, there would be a certain amount of risk involved, especially from inefficient execution of the process of disinfection, which could not be avoided, unless the board-lining could be so treated as to close all its interstices and allow of its being painted or limewashed. However, a caretaker who is capable of acting as a nurse, has been placed in charge of the hospital, and I am glad to say that the Council have decided that any cases of infection which may be admitted into it shall be taken without charge. I believe this to be both a wise and an equitable course, for I am sure that the small amounts which could be obtained as charges from the class of people who are most likely to need such a resource would not be worth

the trouble of recovering, and much difficulty would occur in deciding equitably who should and who should not be charged.

Six cases were notified as Diphtheria during the year, three of which were in the parish of Lydney, and three in that of Tidenham. Two cases were also notified as Membranous Croup at Lydney. They were nearly all very young children and in different localities, with the exception of one outbreak which occurred at Tutshill. The occurrence of a severe outbreak of the disease in this neighbourhood in 1894 naturally invested this outbreak with special importance. It was confined to a single family, living in a small cottage, and two children were affected. The sanitary arrangements in the cottage were not very satisfactory, and the house, if not absolutely overcrowded, was very small for the family which was occupying it. Both cases made a good recovery and no extension of the mischief occurred. None of the other cases call for any special comment.

Three cases of Enteric Fever were notified during the year. The first was a very obscure one, a labouring man living at Aylburton, whose death occurred before I received the notification of his illness. His medical attendant had been in some doubt as to the nature of his illness during its earlier stages, and the case took a turn for the worse somewhat suddenly. I was unable to discover any cause for his illness in the history of his case, so far as I was able to obtain it, nor was there anything in his home to suggest an explanation of it.

The two other cases were lads at Lydney, one of whom had been out a good deal with a cart, and acknowledged that he had drunk water in various places from which the infection might have been derived. This boy was removed to the new hospital at Alvington, where he made a good recovery. The other lad was nursed at home, where there was ample accommodation for so doing, and he also made a good recovery, no one else in the household, which was a fairly large one, being

affected. No cause for the attack could be discovered, but it probably originated, like the other, in the drinking of contaminated water, from some accidental source, which the heat of the weather at that time made very probable.

The occurrence of these two cases, when viewed in relation to the serious outbreak of Typhoid Fever which occurred at Lydney in 1894, previous to which no case of the disease had occurred in the town for at least 22 years, gives reason for suspecting that from some cause or other the subsoil waters of Lydney are not so free from danger as they have for so many years appeared to be. To what this deterioration may be due can be only a question of surmise ; but it is evident that the increase of new houses, the multiplication of drains, some of them, it is to be feared, of defective construction, and the general pollution of the surface of the ground by pig keeping and other contaminations, are causes which readily suggest themselves as sufficient to account for such a change. This consideration gives additional force to the efforts now being made by the Parochial Committee to secure a water supply for Lydney as a means of flushing the sewers which it is purposed to construct. Indeed, on this latter ground alone the provision of a water supply is indispensable, for the gradients of the sewers and their liability to periodic obstruction at the outfall are such that unless means for regularly flushing them are provided there is great fear that they may become sources of great danger to the public health and of great difficulty in dealing with the emanations from them. The need of a supply as a protection against fire is also obvious.

I have referred in the introductory portion of this Report to the delay which has occurred in the scheme for supplying water to the Netherend portion of the parish of Woolaston. This has been entirely outside the control of the District Council and is due to causes which affect all schemes of the kind that have to go through the ordeal of investigation and approval by the Central Authority. Similar delay has occurred

in connection with the scheme of sewerage for Lydney which has taken much longer to complete than might have been reasonably anticipated.

The work done in connection with the routine inspection of the District is epitomised in the following summary, which has been supplied to me by Mr. W. Williams, the Inspector :

HOUSES :

Cleansed and disinfected	...	...	...	...	15
Repaired	...	...	...	...	3
New built	...	...	...	...	11
Closed	...	...	...	...	0
Overcrowding abated	...	...	...	...	7

CLOSETS :

New provided	...	...	...	...	14
Repaired	...	...	...	...	10
Cleansed	...	...	...	...	16

DRAINS :

Defective repaired	...	...	...	...	7
Offensive cleansed	...	...	...	...	24

OTHER NUISANCES :

Offensive refuse removed	...	...	...	...	17
Animals improperly kept	14
Cesspools cleansed	10

WATER SUPPLY :

Defects remedied...	6
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Total ... 154

Bakehouses	inspected	8
Dairies and Milkshops	,,	22
Lodging-houses	,,	1

All of the above matters were of a routine character, no legal proceedings were required, and no features of special interest occurred in connection with any of them.

The following expenditure has been incurred by the Council in works of sanitary construction :—

	£	s.	d.
Sewerage	29	7	11
Water Supply	26	1	8
	55	9	7

TETBURY

RURAL DISTRICT COUNCIL.

Composition of District : Parishes of Kingscote, Leighterton, Newington Bagpath, Ozleworth, Boxwell, Oldbury, Didmarton, Weston Birt, Beverstone, Cherrington, Shipton Moyne, Long Newnton, Ashley, part of the Parish of Avening, and so much of the Parish of Tetbury as is not included in the jurisdiction of the Tetbury Urban Authority.

Sanitary Inspector : Mr. W. S. Jenkins, Tetbury.

Area—Glos., 26,215 acres ; Wilts. 3,271 acres ; Total 29,486

Population (1891), 3,983 ; „ 403 „ 4386

Inhabited houses (1891), 887 ; „ 82 „ 969

Sanitary business taken after the ordinary fortnightly meeting of the District Council.

VITAL STATISTICS OF DISTRICT.

					1896.		Highest No.* Lowest* in 23 years. ditto.		
BIRTHS—					GLOS.	WILTS.	Total.	In Whole District.	
Males	...	...	...	...	45	5	—	72	36
Females	...	...	...	...	49	6	—	70	33
Total	...	...	...	...	94	11	—	133	70
Ratio of Births per 1000 of population					23.9	27.2	—	45	20.1
DEATHS—									
Small Pox and Chicken Pox	...			...	0	0	0	1	0
Measles	...	...	...	...	0	0	0	2	0
Scarlatina	..	...	...	...	0	0	0	3	0
Croup and Diphtheria	..	...	...	...	0	0	0	2	0
Whooping Cough	...	...	...	...	0	0	3	3	0
Fever	...	...	...	...	0	0	0	3	0
Cholera, Diarrhœa, and Dysentery					1	2	3	2	0
Puerperal Fever	...	...	...	...	0	0	0	—	—†
Erysipelas	...	...	...	...	0	0	0	—	—†
Total Zymotic Deaths	...	...	...	...	1	2	3	7	0
Total Deaths from all causes	...			...	47	4	51	71	30
Ratio of Deaths per 1000 of population					11.8	9.9	11.6	19.4	9.5
Deaths under 5 years of age					15	1	16	14	4

* In consequence of the addition of a portion of the Parish of Avening to the Tetbury Rural District in 1893, containing a population of 894, the highest and lowest numbers of past years are not now strictly comparable.

† In earlier Reports these diseases were grouped together, and it would be difficult to obtain separate records of them.

TETBURY RURAL.

CASES OF NOTIFIABLE INFECTIOUS DISEASE WHICH HAVE COME TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH DURING THE YEAR.

	Scarlatina	Diphtheria	Cont. Fever	Erysipelas	Total
Charlton	1	0	0	1	2
Doughton	2	0	0	0	2
Elmstree	1	0	0	0	1
Tetbury Upton ...	0	0	1	0	1
Avening	0	1	0	0	1
Weston Birt	1	0	0	0	1
	<hr/> 5	<hr/> 1	<hr/> 1	<hr/> 1	<hr/> 8

THE sanitary history of this district during the past year has been as devoid of any incident worth recording as it has been for most of the preceding years. A death-rate of 11·6 per thousand and a practical freedom from Zymotic mortality indicate a condition of things on which it would be difficult to improve. The number of cases of notifiable disease which have come to my notice through the adoption of the Infectious Diseases Act by the Council in 1895 is, it is true, somewhat greater than it was in that year, there having been a few mild cases of Scarlet Fever. The single case of Diphtheria, like that of Continued Fever, was not of a serious nature and calls for no special notice. The Tetbury district fortunately escaped the contagion of Small Pox during the past year, being one of four in the Combined District which did so. As I have pointed out in previous Reports this district enjoys exceptional advantages, which make it but little liable to attacks of serious infectious disease beyond the periodic visitations of Measles and Whooping Cough, which even the most favoured districts cannot escape. Its small population is for the most part distributed over scattered villages, on the higher level of the Cotswolds, upon a subsoil which lends itself readily to drainage. Several of them belong to landed proprietors who have done as much to make them models of what country

villages should be as can be reasonably expected. Under these circumstances it might be expected that the sanitary record of the district from year to year offers little upon which to comment.

The only incident of any importance is the effort which has been made to improve the water supply of the village of Avening, the initiative of which is due to Mr. Erskine Pollock, Q.C., of Avening Court, who has taken a very active interest in the enterprise throughout. In the early part of the year a largely attended parish meeting was held at which the details of the proposed scheme were explained by the Chairman (Mr. Pollock), and resolutions were unanimously adopted accepting the scheme and pledging those present to do their best to carry it out. By this scheme the water, which would be obtained from a spring on Longman Farm (belonging to Mrs. Pollock) would be carried in pipes to the Cross and thence to such points on the roads diverging from there as would give a supply, within a reasonable distance, to nearly all the inhabitants of the village, standards with taps being provided at suitable spots. It was estimated that the cost of the scheme would be about £350, the whole of which would be met by private contributions and a parish fund which the parish had brought with it, as a dower, on its transference from the Stroud to the Tetbury Union. It was proposed that the whole of the construction should be undertaken by the Parish Council, without any appeal to or interference by the District Council, the works, when completed, being vested in the former body. An important feature in the scheme was a reservoir at the spring capable of holding 35,000 gallons, which it is calculated would be enough to last the village for at least a week. Unfortunately owing, I believe, to difficulties involved in connection with the claims of the owners of some of the land affected, execution of the scheme has been delayed, but it is hoped that it will be commenced this year as the bulk of the money required has been collected.

The work done in connection with the general sanitary supervision of this district during the past year is thus summarised by Mr. W. S. Jenkins, the Sanitary Inspector.

HOUSE ACCOMMODATION—

New houses built	...	...	...	...	...	6
Dilapidated houses repaired	...	...	...	...	...	2

CLOSET ACCOMMODATION—

New closets provided	...	...	...	...	...	9
Foul ditto, cleansed	...	...	...	...	...	5

DRAINAGE—

Existing drains repaired or reconstructed	...	...	...	...	8
Foul ditto, cleansed	...	...	...	...	3

OTHER NUISANCES—

New water supplies provided	...	...	...	...	3
Existing ditto, improved	...	...	...	...	5
Offensive refuse removed	...	...	...	...	4
Overcrowding abated	...	...	...	...	2
Slaughter-houses inspected and cleansed	...	...	...	...	2
Dairies and milk shops under inspection	...	...	...	...	21
Lodging houses (none in the district.)					

In only one of the above cases were legal proceedings required, in that of a man in the neighbourhood of Tetbury who kept pigs in a very objectionable way and in whose case an order was made to abate the nuisance.

TETBURY

URBAN SANITARY AUTHORITY.

Composition of District: The Town of Tetbury.

Sanitary Inspector: Mr. W. S. Jenkins, Tetbury.

Area, 105 acres.

Population in 1891, 2419.

Inhabited houses ,, 465.

The District Council meets once a month.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						Highest No. in 23 years.	Lowest ditto.
					1896.		
Males	...	...	...	...	28	50	21
Females	...	...	...	...	27	56	22
Total	...	...	...	...	55	106	42
Ratio of Births per 1000 of population ...						43·8	17·9
					22·7		
DEATHS—							
Small Pox	...	...	...	...	0	0	0
Measles	...	...	...	...	0	5	0
Scarlatina	...	...	...	...	0	2	0
Croup and Diphtheria	...	...	...	..	0	2	0
Whooping Cough	...	...	...	...	0	4	0
Fever	...	...	...	..	0	3	0
Cholera, Diarrhœa and Dysentery	...	...	...	...	0	3	0
Puerperal Fever	...	...	..	...	0	2	0
Erysipelas	...	...	...	...	1	—	—*
Total Deaths from Zymotic Affections	...	...	...	...	1	8	0
Total Deaths from all causes	...	...	...	...	32	67	28
Proportion of Deaths per 1000 of population						28·5	11·4
					12·9		
Deaths under 5 years of age						18	5
					6		

CASES OF NOTIFIABLE INFECTIOUS DISEASE WHICH HAVE COME TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH DURING THE YEAR

Scarlet Fever	...	...	...	...	...	...	4
Erysipelas	...	...	...	...	...	...	1

* In earlier Reports this disease was grouped with Puerperal Fever.

TETBURY URBAN.

IN my last Annual Report I had to record a remarkably high death-rate for the district (23·1). It was not actually the highest that had been reported for the district during the last 23 years, for, as will be seen from the foregoing table of vital statistics, the death-rate has on one occasion reached so high a number as 28·5 per thousand living. During the past year the mortality has fallen nearly 50 per cent. or to within a short distance of the lowest point which it has reached during the period above mentioned. These excessive fluctuations, as I have more than once before pointed out, are very liable to occur in small populations, in whom a few deaths more or less during the year, from purely accidental causes, will make a great difference in the rate per thousand. The Zymotic deaths during the year are represented by a single death from Erysipelas.

The only cases of notifiable disease which have come to my knowledge during the year, in addition to the case of Erysipelas before referred to, are four cases of Scarlet Fever. Three out of the four occurred in the autumn and the fourth as far back as January, the latter being the last of a small outbreak which occurred during the autumn of 1895.

I am glad to be able to record the fact that at the commencement of the year the Council adopted the Infectious Diseases Notification Act. It is not that the net results of doing so are likely to be very important, for the actual number of cases reported is not likely at any time to be large, and in the great majority of them a knowledge of their existence would probably reach either myself or the Sanitary Inspector not long after their occurrence; but it is possible that in some exceptional cases, in which there might be a motive for concealment, it might not do so, and, under any circumstances,

it is better that the district should fall into line with the great majority of the Sanitary Authorities of the kingdom rather than remain an exception, for no sufficient reason.

This district, like that of Tetbury Rural, was fortunate enough to escape any importation of Small Pox infection into it during the Gloucester epidemic. The Council made a provisional arrangement for renting two cottages in a fairly isolated position, but if a case had occurred suddenly, as happened a few years ago, it could not have been removed there for some days, as no arrangements were completed for occupying and furnishing them.

The condition of the water supply of the town has materially improved since my last Annual Report, the pumping power having been increased so that the reservoir was kept constantly full even during the protracted drought of last summer. By this improvement 1000 cubic feet of water can now be pumped at a cost of 3d. instead of, as previously, at a cost of about 5d. for 600 feet. The advantage which the supply is to the town, irrespective of purely sanitary considerations, was well illustrated in the case of a fire which occurred in a local brewery, which would have been entirely destroyed but for the means which the water main offered for coping with it at the outset.

The sewage outfall works have continued in a satisfactory condition, no complaint having reached me from any source respecting them.

Mr. W. S. Jenkins, the Surveyor and Sanitary Inspector for the district, reports that the work done during the year has been as follows :—

HOUSE ACCOMMODATION :

New houses built	...	...	...	...	...	0
Existing ditto repaired	...	...	...	...	...	7

CLOSET ACCOMMODATION :

New provided	...	...	...	...	...	2
Foul cleansed	...	...	...	...	...	11

Carried forward ... 20

					Brought forward	...	20
DRAINAGE :							
New drains provided	...	...	...	...	...	1
Existing drains repaired		..	...	...	..	6
Foul ditto cleansed	...	...	...	...	...	7
OTHER NUISANCES :							
Offensive refuse removed		...	...	..	.	4
Animals improperly kept		..	...	...	...	4
Overcrowding abated	...	...	...	...	...	1
Milk shops registered and inspected			...	..	...	3
Lodging-houses	„	„	...	..	...	2
Slaughter-houses	„	„	...	...	...	2
Cases under inspection	...	..	...	...	...	2
					Total	..	52
Houses connected with Water Supply during the year...							10

EAST DEAN & UNITED PARISHES RURAL DISTRICT COUNCIL.

Composition of District: Parishes of Littledean, Flaxley, Abinghall, Mitcheldean, Blaisdon, Minsterworth, Churcham, Bulley, Huntley, Longhope and Ruardean; and the *Township* of East Dean.

Surveyor: Mr. W. Whitehouse, Cinderford.

Sanitary Inspector: Mr. W. Ellis, Oakle Street.

Area, 28,683 acres.

Population in ... 1891, 20,401.

Inhabited Houses, ,, 4,263.

The District Council meets once a month on eight months of the year at Cinderford, and on other months in the Board Room, at the Union Workhouse, Westbury.

VITAL STATISTICS OF DISTRICT.

BIRTHS—	1896.	Highest No. in 23 years.	Lowest ditto.
Males	339	409	274
Females	361	394	303
Total	700	790	602
Ratio of Births per 1000 of population ...	34.3	45.7	31.4
DEATHS—			
Small Pox	1	9	0
Measles	5	28	0
Scarlatina	5	68	0
Croup and Diphtheria	0	14	2
Whooping Cough	9	26	0
Fever	0	13	0
Cholera, Diarrhœa, and Dysentry ...	4	12	0
Puerperal Fever	1	—*	
Erysipelas	0	—*	
Total Deaths from Zymotic Affections ...	25	112	14
Total Deaths from all causes	266	406	256
Ratio of Deaths per 1000 of population ...	13.0	23.5	13.0
Deaths under 5 years of age	91	214	91

* In earlier Reports Puerperal Fever and Erysipelas have been grouped together; it would be difficult now to separate their *maxima* and *minima* for the last 23 years.

EAST DEAN RURAL.

CASES OF INFECTIOUS DISEASES NOTIFIED IN 1896.

	Small Pox.	Scarlet Fever.	Croup and Diphtheria	Typhoid Fever.	Erysipelas.	Puerperal Fever.	Total.
Cinderford ...	8	84	1	0	7	0	100
Drybrook ...	1	26	0	0	2	0	29
Ruspidge ...	0	2	0	0	0	0	2
Other parts of East Dean ... }	3	33	0	2	2	0	40
Mitcheldean ...	0	2	0	1	1	0	4
Littledean ...	0	11	0	0	1	0	12
Huntley ...	0	0	1	0	0	0	1
Minsterworth ...	0	0	1	0	0	0	1
Longhope ...	0	0	0	1	0	0	1
Churcham ...	0	1	0	0	0	0	1
	12	159	3	4	13	0	191

THE general birth and death rates of this district for the past year are satisfactory, the former having regained somewhat of the considerable falling off which it had suffered during the two previous years, and the latter having fallen to the lowest point it has reached during the last 23 years. The zymotic mortality, on the other hand, exhibits a very material increase, due to the prevalence in the district during the year of Measles, Scarlatina, and Whooping Cough. Measles has been chiefly present in Cinderford and Ruspidge; Whooping Cough in Lydbrook, Ruardean, and other scattered localities of the Forest. Scarlatina also has been almost entirely confined to the Forest district, the agricultural parishes having been practically free from it. The epidemic, though very considerable in point of numbers, has been, on the whole, of a particularly mild type, the great majority of the cases having been so trivial, both in the intensity and duration of the symptoms of the disease, that it was difficult to get the parents of the children to recognise the infectious nature of the illness. A noteworthy fact in connection with this outbreak is the very small number of cases of a Diphtheritic

type which have been notified during the year, there having been only three, and two of these were in parishes in which Scarlatina was not present. The only case of Diphtheria which was of a serious character occurred at a cottage in Minsterworth, in the person of a child four years of age, who ultimately died; but, as the death occurred on the 2nd of January in this year, it does not appear in the list of deaths for 1896. The house is situated close to the river, but is not otherwise damp. Two other children on the premises were unaffected. There were no other cases of the kind in the neighbourhood, and no clue could be obtained as to any source from which the infection was derived.

The four cases notified as Typhoid Fever during the year, occurred at different times and in different localities, were all of a mild character and call for no comment.

This district suffered more from the effects of the Small Pox epidemic in Gloucester than any other portion of the Combined District, except the Gloucester Rural. Twelve cases in all occurred in it. The main outbreak took place at Steam Mills, near Cinderford, where, in the middle of March, the infection was introduced by an unvaccinated child, who had been brought from Gloucester with the infection in her. This child had a severe attack, but was well nursed and recovered. About three weeks after this outbreak, a family, who lived next door, consisting of a father and six children, who had been all vaccinated in infancy, but had not been re-vaccinated, exhibited symptoms of a suspicious character. The father, aged 41, developed a general discrete eruption of unquestionable Small Pox, and four children, of the respective ages of 13, 12, 11 and 9, subsequently exhibited more or less evidence of the disease, varying from a few scattered papules in the younger, to a general discrete but abortive eruption in the oldest child, illustrating very well the influence of vaccination in modifying the disease. The infection was unquestionably derived from the next house, so that there can be no doubt as to its intensity; but in this

family, protected as it was to a certain extent by vaccination, its attack was almost entirely foiled. During the interval between the occurrence of these two outbreaks, two others had occurred, one of a middle-aged woman in Cinderford itself, and the other of a young woman at Morwood, near Lydbrook. The first of these persons had been to Gloucester about a fortnight before, where a son was suffering from Small Pox, and there is no doubt that she incurred the infection there. She had been vaccinated in infancy only, and had a comparatively mild attack. The source of the infection in the second case could not be traced with such certainty, but there had been communications with Gloucester that, in all probability, were the means by which it was introduced. A fortnight after the first case occurred at Lydbrook, a woman, living in a cottage about half-a-mile on the hill above that case, was notified as suffering from the disease, which also subsequently attacked an infant she was suckling. The mother's case was the most protracted and tedious that I have ever had under my observation. Not on account of its primary severity, for the eruption, though general, was not confluent, but from the extreme difficulty in getting the skin free of the eruption. Altogether the case lasted for more than six months, during the greater part of which a nurse was kept in the cottage, and the occupants were fed by the District Council, so that the case was a very costly one. Could the woman have been removed to a hospital at an early stage of her attack, she would probably have recovered in a quarter of the time. But when she was attacked no hospital accommodation was available, and even if there had been it would have been by no means easy to have removed her, for the cottage is situated on the side of a steep hill, in a position which is impracticable for vehicles, so that she would have had to be carried for a considerable distance over a very unlevel path. In this case the infection was, probably, imported with a parcel of clothes which the woman

had received from Gloucester. Shortly before this, when these cases were occurring, the Westbury Board of Guardians had decided to provide accommodation in some part of their district for the isolation of cases of Small Pox, and a very suitable site having been offered by the Office of Woods and Forests, in a picturesque spot in the Forest, near Gunns Mills, orders were given for the erection of an iron building lined with wood, the completion of which was pushed on with as much energy as possible. By the time that the next case had occurred the hospital was so far completed as to be ready to receive the patient, a woman of 30, living at Cinderford, the source of whose infection was not discoverable. She had been vaccinated in infancy, and recovered, but the next case removed to the hospital, and the last in the district, an unvaccinated child at Drybrook had a very severe attack and died. In none of these cases, except in the one family at Steam Mills, before referred to, in whom the infection was generally diffused before it could be recognised, did the disease spread, in any of the households who were attacked, beyond the first case. This was entirely due to the energetic way in which Dr. Macartney, Dr. Macmillan, and Dr. Linde, who severally attended the cases, pushed vaccination and re-vaccination amongst those who had been exposed to the infection. There was some opposition to this in Cinderford, where the teachings of the anti-vaccinators have met with considerable support; but the fear of the disease had a remarkably chastening effect, as case after case occurred, and by the time the last outbreak took place a considerable amount of the vaccination arrears of this district had been cleared off. In this, as in other action by which the outbreaks were promptly met, I have the pleasure of acknowledging the valuable assistance which Dr. Macartney, who was on the spot, was able to render to myself personally and to the District Council. In such a disease as Small Pox promptness of action is of the first importance, in regard especially to the isolation of the sick, the burial of the dead,

and the vaccination of those who have been exposed to the infection ; and in all these matters Dr. Macartney's prompt action was of special value.

Some question has arisen since the termination of the epidemic as to the maintenance of the Gunns Mill Hospital. Having been provided by the Board of Guardians, its maintenance was, of course, a matter, in the first place, for their consideration. As the district of the Board includes the Urban Councils of Westbury-on-Severn, Newnham, and Awre, in addition to East Dean, an effort was made to induce all of these Authorities to accept the transfer to them, in their sanitary capacity, of the hospital which had been provided by them for the whole district in their Poor Law capacity. But here, as is so often the case in these matters, the unanimity which had characterised the action of the Board, as a whole, seemed to evaporate when it was resolved into its constituent parts ; for the three Urban Districts refused to have anything to do with the hospital, and it was only after some discussion that the East Dean District Council agreed to accept the responsibility of maintaining it. Much of the difficulty in arriving at this conclusion was due to the fact that the Council have already a small hospital at Soudley, intended for cases of Typhoid Fever, but which has been but little used ; and also that the Gunns Mill Hospital, having been actually used for Small Pox, could not, until it had been effectually disinfected, safely be employed for isolating cases of other diseases. But as I felt bound to point out to the Council, whilst it might be more economical to have only a single hospital to maintain, it was a great advantage to have a separate building specially available for Small Pox ; and that, under any circumstances, it was neither judicious to bring other cases to a hospital that had been used for this purpose, nor was it probable that any but persons actually attacked with Small Pox would consent to be removed to it, at any rate until it could be effectually disinfected. I pointed out to the Council, as I had done to other Authorities in my

district in a similar position, the difficulty of doing this in the case of a building, the walls of which were constructed, as these are, of an absorbent material, largely permeated by crevices. The difficulty, however, is mainly one of cost, as it is certainly practicable to deal with these walls in such a way as to make it easy to cleanse and disinfect them when required.

The extreme drought of the earlier part of the past year was much felt in this district. The sources of the public supply at Cinderford, which had previously always been ample for all requirements, became reduced to a point which made its continuance doubtful. The supply at Blakeney Hill was for some weeks greatly reduced, and the public wells in several parts of the district were almost entirely exhausted. Fortunately, the rain which fell in July and August came in time to prevent what might have been a serious calamity, so that, with some outlay which was incurred on the wells at Ruardean Hill, and improvements made by the Surveyor at Blakeney Hill, the difficulty was tided over, and now all anxiety has been for some time at an end.

The question of the adoption of bye-laws to regulate new buildings in other parts of the district than Cinderford has more than once been under the discussion of the Council, and a communication was received from the Local Government Board in the early part of the year, offering to extend the Urban powers passed for Cinderford to the whole of the district ; but the matter was referred to the consideration of the Authorities in the more rural parts of the district, and seems to have got hung up there.

The only matters of drainage which have involved special consideration have been the existence of a long-standing nuisance on Bilson Green, in a streamlet there, into which sewage finds its way, and the question of providing for the requirements of the houses at the top of Cinderford Hill and on Littledean Hill. So far as the houses, which have a fall

on to the Cinderford side of the hill, are concerned, there does not appear to be any difficulty, and no very serious expense involved. But any extension of the present unsatisfactory arrangement for draining the Littledean Hill houses will necessitate considerations of outfall which may involve serious difficulties.

I have, at different times, inspected the slaughter-houses, bakehouses, and milk shops of East Dean, and have found them fairly satisfactory, all things considered.

Mr. Whitehouse, the Surveyor for the district, has supplied me with the following report of the work done in his department during the year:—

Plans for new houses in East Dean approved	...	4
„ enlargement of houses	... ..	1
Length of new sewer constructed	... ..	54 yards
„ new water mains „	... ..	900 „
No. of premises supplied from Cinderford Waterworks	1472	
„ „ by meter (including 5	schools, 9 works, and 1 chapel)...	
	... ..	15
Nett revenue from Waterworks	... ..	£740

During the year the water charges have been considerably revised. The minimum charge of 9s. for a domestic supply is unaltered, but the charge of 7½d. per cent. on the rateable value commences at £6 instead of £9, as heretofore, and charges for horses, carriages and slaughter-houses are made. This revision has increased the revenue 5 per cent. The charge to those supplied by meter has been raised from 1s. to 1s. 3d. per 1000 gallons.

The Cinderford, Blakeney Hill and Horsepool Bottom supplies are all in good condition, and there is a good supply of water at the springs supplying them.

The whole of the sewers in Cinderford and Ruspidge and the arrangements at the outfall works continue to act satisfactorily.

Mr. W. Ellis, Sanitary Inspector of the district, has supplied me with the following summary of the work done during the year in his department:—

HOUSE ACCOMMODATION :

Houses cleansed and whitewashed	...	...	...	42
„ repaired	...	...	...	13
„ closed as unfit for habitation	...	...	...	1
Lodging-houses under inspection	...	...	...	4

CLOSET ACCOMMODATION :

New closets provided	...	...	...	21
Old closets repaired and reconstructed	...	...	...	16
„ cleansed and ventilated	...	...	...	97

OTHER NUISANCES :

Offensive refuse removed	...	...	...	51
Pig nuisances abated	...	...	...	18
Ditches and cesspools cleansed	...	...	...	11
Defective water supply remedied	...	...	...	9
Dairies, cowsheds and milkshops under inspection	...	...	...	68
Slaughter-houses under inspection	...	...	...	19

Total ... 370

None of the above matters call for any special notice.

WESTBURY-ON-SEVERN URBAN DISTRICT COUNCIL.

Composition of District: The Parish of Westbury-on-Severn.
Sanitary Inspector and Surveyor: Mr. J. Cadle, Chaxhill,
 Westbury.

Area, 8207 acres.

Population in ... 1891, 2,005.

Inhabited houses ,, 436.

Sanitary matters dealt with at the monthly meetings of
 the Council.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						Highest No. in 23 years.	Lowest ditto.
Males	...	...	...	...	1896.		
	...	...	...	...	27	48	19
Females	...	...	...	...	32	39	18
Total	...	...	...	...	59	87	42
Ratio of Births per 1000 of population...					29.5	38.3	21.0
DEATHS—							
Small Pox	...	...	...	...	0	1	0
Measles	...	...	...	...	0	3	0
Scarlatina	...	...	...	...	0	1	0
Croup and Diphtheria	...	...	...	...	0	7	0
Whooping Cough	...	...	...	...	0	5	0
Fever	...	...	...	...	0	2	0
Cholera, Diarrhoea, and Dysentery	...	...	...	...	1	5	0
Puerperal Fever	...	...	...	...	0	*—	*—
Erysipelas	...	...	...	...	0	*—	*—
Total Zymotic Deaths	...	...	...	...	1	10	0
Total Deaths from all causes	...	...	...	...	37†	47	18
Ratio of Deaths per 1000 of population...					18.5	22.0	11.2
Deaths under 5 years of age					14	16	9

* In previous Reports, Puerperal Fever and Erysipelas have been grouped together; it would be difficult to separate their *maxima* and *minima* for the last 23 years.

† This number is exclusive of 13 deaths which took place in the Union Workhouse located in this parish, but which belonged to other parishes.

WESTBURY URBAN.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR.

Small Pox	...	...	...	...	...	3
Puerperal Fever	...	...	...	...	...	2

THE only incident in the otherwise uneventful sanitary history of this district for the past year which calls for any notice is the visitation of Small Pox which occurred during the Gloucester epidemic. Two separate outbreaks took place. The first in the early part of February in a cottage at Bollow in which two boys, of the ages of eight and five years respectively, were successively attacked. One of them had been vaccinated in infancy but not successfully. He had a copious eruption. The other who had been vaccinated successfully, had a much lighter one. The father, mother, and a child who was unvaccinated were at once operated on and no further extension of the disease took place, the cottage being hospitalised and the inmates quarantined until the place could be cleansed and disinfected. The lad who first developed the disease had been nowhere except to the Walmore School, which is close by, and there was no other case in the neighbourhood at the time from which the infection could have been derived ; but about a fortnight before his father had been in to Gloucester, and though he had not knowingly been in contact with any infection it is impossible to resist the conclusion that he had done so and had carried it back with him to his house. About a month afterwards a third case of the disease occurred in the person of a young man, 23 years of age, living at the Denny, who had a very mild attack. He had been vaccinated in infancy. No distinct clue could be obtained to the source of the infection in this case, but as the patient had been mixing with drovers and others, and had

been to Gloucester, it was, no doubt, primarily derived from there. The cottage was hospitalised, all practicable precautions enforced, and no extension of the mischief occurred.

During the course of the year two cases of Puerperal Fever were notified, but they were unconnected in any way with each other and were not due to any causes which are under the control of the Sanitary Authority.

The routine work of inspection during the year is thus summarised by Mr. Cadle, the Sanitary Inspector for the district :—

Foul closets cleansed	.	...	...	...	..	2
,, drain	,,	..	...	..	...	1
,, ditch	,,	...	...	...	..	1
Overcrowding abated	...	...	..	...	...	1
New closets constructed	...	...	...	...	...	4
Total						9

The district, a purely rural one, has generally been very free from notifiable diseases, except when imported into it, as in the case of Small Pox referred to above, and presents little scope for sanitary activity.

NEWNHAM

URBAN DISTRICT COUNCIL.

Composition of District: The Town and Parish of Newnham.

Sanitary Inspector: Mr. W. Ellis.

Area, 1,937 acres.

Population in 1891, 1,401.

Inhabited houses, 1891, 273.

Sanitary business transacted at monthly meeting of the Council.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						1896.	Highest No. in 23 years	Lowest ditto
Males	...	...	...	...	...	19	23	12
Females	...	...	...	...	...	10	26	10
Total	...	...	...	...	...	29	49	24
Ratio of Births per 1000 of population						20·7	33·3	17·2
DEATHS—								
Small Pox	...	...	...	...	...	0	5	0
Measles	...	...	...	...	...	2	2	0
Scarlatina	...	...	...	...	...	0	1	0
Croup and Diphtheria	...	...	...	...	...	0	1	0
Whooping Cough	...	...	...	...	...	0	2	0
Fever	...	...	...	...	...	0	1	0
Cholera, Diarrhœa, and Dysentery	...	...	...	...	...	0	2	0
Puerperal Fever	..	...	...	...	...	0	—	—*
Erysipelas	...	...	...	...	...	0	—	—*
Total Zymotic Deaths	...	...	...	...	...	2	5	0
Total Deaths from all causes	...	...	...	...	...	24	29	13
Ratio of Deaths per 1000 of population						17·4	20·5	8·5
Deaths under 5 years of age						5	10	2

* In previous years Puerperal Fever and Erysipelas were grouped together. It would be difficult to separate their *maxima* and *minima* during the previous 23 years.

NEWNHAM URBAN.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR.

Scarlet Fever	2
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THE vital statistics of this district for the past year present little material for comment. The birth-rate is relatively low and the death-rate high, but not more than can be accounted for by the accidental fluctuations to which such small totals of births and deaths are liable. A zymotic mortality of two deaths from Measles, and a record of only two notifications of Scarlet Fever, indicates that the district has been free from any serious prevalence of preventible disease.

In my last Annual Report I referred to a proposal which had been made by Mr. Woods, a resident of long standing in the town, to provide a water supply at his own expense. During the past year this project has been carried into effect, and the town is now provided with a constant supply of excellent water, which, even as a means of dealing with fires, apart from purely sanitary considerations, must be recognised as a great boon.

I have, from time to time, inspected different parts of the town, including the two slaughter-houses, bakehouses, and one milkshop and have found nothing serious amiss.

The general work of inspection, as carried on by Mr. W. Ellis, the Sanitary Inspector, is summarised by him as follows :—

Manure heaps removed	...	...	...	...	4
Houses whitewashed	...	...	...	...	12
Foul privies cleansed	...	...	...	...	15
Over-crowding abated	...	...	...	...	1
Foul drains cleansed	...	...	...	...	6
Registered dairies inspected	...	...	...	...	1
Total					39

AWRE
URBAN DISTRICT COUNCIL.

Composition of District: The Parish of Awre.

Sanitary Inspector: Mr. W. A. Willetts, Blakeney.

Area, 4,330 acres.

Population in 1891, 1179.

Inhabited Houses (1891), 259.

Sanitary business transacted at the monthly meetings of the Council.

VITAL STATISTICS OF DISTRICT.

BIRTHS—						1896.	Highest No. in 23 years.	Lowest ditto.
Males	...	...	...	...	...	11	25	9
Females	...	...	..	...	...	18	26	6
Total	...	...	...	...	...	29	46	20
Ratio of Births per 1000 of population ...						24.5	35.9	18.6
DEATHS—								
Small Pox and Chicken Pox			...	...	...	0	0	0
Measles	..	...	..	...	...	0	0	0
Scarlatina	...	...	...	..	...	0	3	0
Croup and Diphtheria			...	...	...	0	3	0
Whooping Cough			...	...	...	0	1	0
Fever	...	...	...	...	...	0	1	0
Cholera, Diarrhoea, and Dysentery					...	0	2	0
Puerperal Fever		..	...	...	...	0	2	0
Erysipelas	...	...	...	...	...	0	0	0
Total Deaths fom Zymotic Affections						0	6	0
Total Deaths from all causes					...	14	33	12
Ratio of Deaths per 1000 of population						11.8	24.4	10.4
Deaths under 5 years of age					...	2	12	1

AWRE URBAN.

CASES OF NOTIFIABLE DISEASE NOTIFIED DURING THE YEAR

None.

THE vital statistics of this district for the past year do not present any feature of interest, unless it be the fact that not a single case of notifiable disease has occurred during the whole year. In the early part of it an outbreak of Anthrax was notified to me by the police, on one of the best farms in the district, but I found, on visiting the place, that all proper precautions had been taken, and that no explanation of the origin of the mischief was discoverable.

The Awre Council, in common with those of the Newnham and Westbury Urban Districts, were invited to combine with the East Dean Rural in taking over the Small Pox Hospital which had been erected by the Guardians of the Westbury Union, of which they form part, but declined to do so, as they had also previously declined to take any share in the Soudley Hospital. So that, although this latter building is close to the border of their district, and within a couple of miles of the town of Blakeney, they will be unable to avail themselves of it in case any outbreak should occur either in Blakeney or any other part of the district. It is difficult to see how such a course of action as this can be defended, except on grounds which, if generally acted on, would render social as well as sanitary progress of all kinds impracticable. The need for the provision of accommodation for isolating infectious disease in a district like this, must

not be measured by the general immunity which, as in the present year, it has for some time enjoyed from any serious visitation of such disease. Even within the last half-dozen years, cases have occurred in the Awre District which ought to have been removed to an isolation hospital, if one had been available. Owing to favourable conditions, and to careful supervision, the mischief has been, in every case, restricted to the house in which it originated ; but it is not safe to rely upon such good fortune always, and contingencies may readily occur in which much trouble and cost may have to be incurred, and possibly lives sacrificed, for want of a provision which every sanitary district should have at its command.

Mr. Willetts, the Sanitary Inspector for the District, has supplied me with the following summary of work which has been done during the year in connection with the general supervision of the district, and is a very creditable record of activity in this department :—

DWELLING HOUSES—

Cleansed	1
----------	-----	-----	-----	-----	-----	----	-----	---

CLOSETS—

Repaired	...	...	...	..	...	...	...	1
Cleansed		...	...	...	...	...	..	19
New catch pits	...	...	...	...	...	...	...	4
New urinal	...	..	...	...	...	...	...	1

OTHER NUISANCES—

Manure, ash-heaps and other rubbish removed	...	9
Pig nuisances abated	..	4
New pig-styes built	...	5
Pig-styes removed	...	4
Drains flushed	...	11
New drain to cesspool	...	1
Cesspools cleansed	...	4

Carried forward ... 64

						Brought forward	...	64
Dairies, cowsheds and milk-shops under inspection							...	24
Bake-houses	...	...	...	...	...	...	...	4
Slaughter-houses	...	...	...	...	...	...	...	3
						Total	...	95

None of the above matters call for any special comment. I have, on various occasions, inspected the town of Blakeney and other parts of the district, and consider that it is generally in a satisfactory condition.

APPENDIX. TABLE I.—SHOWING THE ACREAGE AND POPULATION OF THE
CONSTITUENT PARTS OF THE GLOUCESTERSHIRE SANITARY DISTRICT.

Sanitary District.				GLOUCESTERSHIRE	
				Acreage.	Population 1891.
East Dean Rural	...	...	...	28683	2040
Chipping Sodbury Rural	..	..	..	63284	1679
Chepstow Rural	...	...	...	...	...
Lydney	„	...	...	24634	811
Cirencester	„	...	...	77019	1207
Gloucester	„	...	...	31547	1146
Tetbury	„	...	...	26215	398
Cirencester Urban	...	...	...	2633	744
Tetbury	„	...	...	105	241
Westbury	„	...	...	8207	200
Newnham	„	...	...	1937	140
Awre	„	...	...	4330	117
Total	...	...	...	268594	8728
Thornbury Rural*	...	...	...	56300	1676

* This District, which for 15 years was included in the Comb...

ATION, AND COUNTY DISTRIBUTION OF THE
E COMBINED SANITARY DISTRICT.

SHIRE.	MONMOUTHSHIRE.		TOTALS.	
Population.	Acreage.	Population.	Acreage.	Population.
...	28683	20401
...	63284	16795
...	42818	7940	42818	7940
...	24634	8119
880	83644	12957
...	31547	11463
403	29486	4386
...	2633	7441
...	105	2419
...	8207	2005
...	1937	1401
...	4330	1179
1283	42818	7940	321308	96506
...	56300	16765

ough now separate, has the same Medical Officer of Health

APPENDIX. TABLE II.—GE

				FLUCTUATION 1881 and						
				Area in Statute Acres.	Population in 1891.	No. of Acres to each Person.	POPULATION.			
							Total increase in 10 years	Total decrease in ditto.	Ratio of increase per 1000 of Population.	Ratio of decrease
Westbury-on-Severn Union.	{	East Dean R. District Council ...	Westbury-on-Severn U.	28,683	20,401	1.2	458	...	24	...
		U.	,,	8,207	2,005	4.0	...	264	...	18
		Newnham	,,	1,937	1,401	1.4	...	54	...	8
		Awre	,,	4,330	1,179	5.3	...	31	...	2
Cirencester Union.	{	Cirencester R. {	Glos.	77,019	12,077	6.3	...	608	...	4
		Wilts	6,625	880	7.5	..	90	...	9	
		U.	2,633	7,441	.34	...	217	...	2	
Chipping Sodbury R.				63,284	16,795	3.7	...	708	...	4
Chepstow Union	{	Lydney R. {	Glos.	24,634	8,119	3.0	(5)			
		Chepstow	Mon.	42,818	7,940	5.1				
Gloucester				31,547	11,463	2.7	1124	...	98	...
Tetbury Union.	{	Tetbury	Glos.	26,215	3,983	6.9	(5)	(5)	...	11
		Wilts	3,235	403	8.0					
		U.	105	2,419	.04	(4)	246			

(1) Average of England and Wales for 1896 :—Birth-rate, 30.1 ; Death

(2) The zymotic death-rate includes deaths from Small Pox, Measle Cholera, Diarrhoea and Dysentery, Erysipelas and Puerperal Fev

(3) This is exclusive of deaths in the Union Workhouse (which is situa

(4) These numbers are exclusive of that part of the Parish of Aveni information.

(5) I am unable to give the data for these spaces.

L STATISTICS OF DISTRICT.

ditto.	BIRTHS in 1896. (1)				DEATHS IN 1896. (1)				SPECIAL DEATH-RATES IN 1896.			
	Males.	Females.	TOTAL.	Ratio of Births per 1000 of Population.	Under 5 Years.	Above 5 Years.	TOTAL.	Ratio of Deaths per 1000 of Population.	Zymotic Death Rate		Infantile Death Rate	
									Gross Number. (2)	Ratio per 1000 of Population.	Gross Number of Deaths under 1 year	Ratio per 1000 of Births.
	339	361	700	34.3	86	180	266	13.0	25	1.2	64	91.4
	27	32	59	29.5	14	23	37	18.5	2	1.0	11	183.3
	19	10	29	20.7	5	19	24	17.4	2	1.7	4	130
	11	18	29	24.5	2	12	14	11.8	0	.0	2	61
					21	99	120	9.2	5	.4	17	
148	170	318	24.5		5	10	15	17.0	1	1.1	3	62
	86	97	183	24.5	22	84	106	14.2	6	.8	16	87
							(3)					
212	220	432	25.6		45	174	219	13.4	12	.7	35	81
130	119	249	30.0		35	81	116	14.2	11	1.3	24	96
110	116	226	28.4		36	80	116	14.6	5	.6	31	137
125	141	266	21.9		46	115	161	13.3	23	1.9	34	127.8
	45	49	94	23.9	15	32	47	11.8	1	0.24	13	
												114
	5	6	11	27.2	1	3	4	10.0	2	4.9	1	
	28	27	55	22.7	6	26	32	12.9	1	.4	5	91
							(3)					

phtheria, Croup, Whooping Cough, Continued Fever of all kinds,
district) attributable to persons from outside the District.
to the Tetbury Rural District, for which I have not the necessary

APPENDIX. TABLE III.—A COMPARATIVE STATEMENT OF THE MORTALITY FOR THE YEAR 1896 FROM

SANITARY DISTRICT		At all Ages.	Under 1 year.	1 & under 5.	5 & under 15.	15 & under 25.	25 & under 65.	65 and over.	Classification by Age.	Small Pox &
Westbury-on-Severn Union.	East Dean Rural ...	279	64	27	11	12	72	93	{ Under 5	
	Westbury-on-Severn } Urban	37	8	6	0	1	9	13	{ Above 5	
	Newnham „	24	4	1	0	1	8	10	{ Under 5	
	„								{ Above 5	
	Awre „	14	2	0	0	1	6	5	{ Under 5	
Cirencester Union.	Cirencester R. {	133	17	5	4	12	42	53	{ Under 5	
		17	3	2	0	0	5	7	{ Above 5	
	„ U. ...	106	16	6	4	5	45	30	{ Under 5	
	„								{ Above 5	
Chipping Sodbury Rural ...		219	35	10	5	10	62	97	{ Under 5	
Chepstow Union	Lydney R. {	116	24	11	7	6	31	37	{ Under 5	
	Chepstow „ {	116	31	4	2	5	37	37	{ Above 5	
Gloucester R. ...		161	34	12	12	10	45	48	{ Under 5	
Tetbury Union.	Tetbury R. {	47	13	2	2	3	12	15	{ Under 5	
		4	1	0	0	0	1	2	{ Above 5	
	„ U. ...	32	5	1	2	0	8	16	{ Under 5	
	„								{ Above 5	
Total ...		1305	257	87	49	66	383	463		

DIFFERENT AGES AND FROM CERTAIN SPECIFIED CAUSES IN THE GLOUCESTERSHIRE COMBINED DISTRICT

Continued Fevers.			Erysipelas.	Puerperal Fever.	Measles.	Whooping Cough.	Diarrhoea, Dysentery, and Cholera.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries and Operations.	Other Diseases.	TOTAL.
Typhus.	Enteric.	Other or doubtful sorts.												
0	0	0	0	0	5	9	4	0	0	25	0	1	43	90
0	0	0	0	1	0	0	0	3	13	30	23	8	108	189
0	0	0	0	0	0	1	0	0	1	2	0	2	8	14
0	0	0	0	0	0	0	0	0	1	2	3	3	14	23
0	0	0	0	0	2	0	0	0	0	1	0	0	2	5
0	0	0	0	0	0	0	0	0	1	3	3	3	9	19
0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	3	0	4	0	5	12
0	0	0	0	0	0	0	0	0	1	5	0	0	15	23
0	0	0	1	0	2	0	0	0	13	7	21	6	60	110
0	0	0	0	0	0	0	0	0	0	1	0	0	3	5
0	0	0	0	0	0	0	0	0	0	0	4	1	7	12
0	0	0	0	0	0	0	0	0	0	3	0	0	17	22
0	0	0	0	1	0	0	0	0	10	6	9	5	50	84
0	0	0	0	0	3	3	1	0	1	7	0	1	26	45
0	0	0	0	0	0	1	1	0	16	18	29	3	106	174
0	0	0	0	0	0	7	0	0	0	8	0	0	17	35
0	0	0	0	0	0	0	1	0	8	10	10	5	47	81
0	1	0	0	0	0	4	0	0	1	2	2	4	23	36
0	0	0	0	0	0	0	0	2	13	6	9	3	46	80
2	0	0	0	0	0	1	3	1	0	7	0	0	31	46
0	0	0	0	0	0	0	0	0	6	10	8	10	65	226
0	0	0	0	0	0	0	1	0	0	5	0	0	9	15
0	0	0	0	0	0	0	0	0	5	2	3	2	20	32
0	0	0	0	0	0	0	2	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
0	0	0	1	0	0	0	0	0	2	3	0	2	5	6
3			2	2	12	26	13	6	95	164	128	59	758	1305

**APPENDIX. TABLE IV.—NEW CASES OF INFECTIOUS SICKNESS
OF HEALTH DURING THE YEAR 1896 IN THE DISTRICTS
CLASSIFIED ACCORDING TO AGE.**

SUB-DISTRICT.				POPULATION AT ALL AGES.		Registered Births.	Aged under 5 or over 5.	No.
				Census, 1891.	Estimated to middle of 1895.			
Cirencester R.	...	{	Glos.	11997	11637	318	{ Under 5	.
			Wilts	880	826		{ Above 5	.
„ U.	...	...	...	7441	7600	183	{ Under 5	.
							{ Above 5	.
East Dean R.	...	...	..	20401	20600	700	{ Under 5	1
							{ Above 5	
Westbury U.	...	...	...	2005	1900	59	{ Under 5	
							{ Above 5	
Newnham „	...	...	...	1401	1376	29	{ Under 5	
							{ Above 5	
Awre „	..	...	...	1179	1170	29	{ Under 5	
							{ Above 5	
Chipping Sodbury R.	...	..	..	16795	16750	432	{ Under 5	
							{ Above 5	
Lydney R.	...	...	Glos.	8119	8500	249	{ Under 5	
							{ Above 5	
Chepstow „	...	...	Mon.	7940	8117	226	{ Under 5	
							{ Above 5	
Gloucester „	...	...	...	11463	11993	266	{ Under 5	7
							{ Above 5	
Tetbury R.	...	{	Glos.	3983	3075	94	{ Under 5	
			Wilts	403	390	11	{ Above 5	
„ U.	...	...	...	2419	2320	55	{ Under 5	
							{ Above 5	
						Totals	{ Under 5	9
							{ Above 5	

NOTE.—No cases were Notified under the age of 5.

COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER
 WESTERSHIRE COMBINED SANITARY DISTRICT,
 SEXES, AGES AND LOCALITIES.

SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH.						NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.			
3	4	5	6	7	8	1	2	3	4
Diphtheria.	Membranous Croup.	Enteric or Typhoid Fever.	Continued Fever.	Puerpera Fever.	Erysipelas.	Smallpox.	Scarlatina.	Diphtheria.	Enteric or Typhoid Fever.
2	...	...	...	...	...	...	5	...	...
4	1	2	...	...	7	...	24	2	...
1	1	...	...	...	1	...	...	...	...
...	1	...	...	...	...	...	4	...	...
...	3	...	...	...	1	...	3	...	...
8	...	1	...	1	9	2	28	1	...
...	...	1	...	...	1	...	...	...	...
3	...	3	...	...	12	2	...	...	...
...	...	...	...	...	...	No hospital available in			
...	...	...	...	2	...	district			
...
...	"	"	...
...	"	"	...
3	2	...	...	...	...	...	"	"	...
1	1	1	...	...	2	...	"	"	...
2	2	1	...	...	...	...	"	"	...
4	...	2	...	...	1	...	"	"	...
...	...	1	...	...	...	...	"	"	...
0	...	2	...	...	...	...	"	"	...
7	1	...	...	...	...	1	...	"	...
18	...	3	...	...	3	5	"	"	...
...	"	"	...
1	...	...	1	...	1	...	"	"	...
...	"	"	...
...	"	"	...
...	"	"	...
...	...	...	...	...	1	...	"	"	...
15	5	3	0	0	3	1	8	0	0
40	7	14	1	3	36	9	56	3	0

us or of Relapsing Fever, or of Cholera.

